Factors explaining farm succession and transfer in Flanders

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UNIVERSITEIT GENT

FACULTEIT BIO-INGENIEURSWETENSCHAPPEN

Zomernacht

Lampen lopen
Wiegend koren achterna
De ronkende nacht
Overmeestert de stilte
Van vallend stro

Een kind
In de armen van de nacht
Smeulend op het brandend koren
Gedoofd door de dauw
Van een nieuwe dag

M.

Promotor:	Prof. dr. ir. Guido Van Huylenbroeck Department of Agricultural Economics Ghent University
Members of the Jury:	Prof. dr. ir. Ludwig Lauwers (ILVO - UGent) Prof. dr. ir. Erik Mathijs (K.U.Leuven) Krijn Poppe M.Sc. (Wageningen University and Research Centre) Prof. dr. ir. Dirk Reheul (UGent) Prof. dr. ir. Jacques Viaene (UGent)
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FACTORS EXPLAINING FARM SUCCESSION AND TRANSFER IN FLANDERS

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Verklarende factoren van bedrijfsopvolging en –overdracht in de Vlaamse landbouw

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Preface

Een doctoraat als zoektocht naar jezelf. Het klinkt niet vanzelfsprekend, zeker niet binnen het vakgebied 'landbouweconomie'. Maar toch heeft dit doctoraatsonderzoek een licht geworpen op de reden waarom ik zelf nooit gedurfd heb om mijn kinderdroom waar te maken… Reeds als kleine meid was meehelpen met het schapen vangen, het hooi binnensteken, stallen uitmesten, lammeringen doen,… vanzelfsprekend. Je groeit er mee op, en stillekes aan groeit de liefde voor de landbouw in je hart. Maar tussen die kinderdroom om ooit zelf 'boerinneke' te worden en het werkelijk overnemen van een landbouwbedrijf liggen mijlen van verschil…

Deze zoektocht was niet mogelijk geweest zonder de steun van een aantal mensen, daarom eerst graag een paar woordjes van dank:

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In het kader van dit doctoraat wil ik alle landbouwers, en zonen en dochters van landbouwers die aan dit onderzoek meegewerkt hebben, van harte danken. Harde cijfers over de Vlaamse landbouwsector gaven me twijfels over de toekomst van de Vlaamse landbouw, maar de gedrevenheid die ik bij jonge landbouwers gevonden heb, zeggen me dat er zeker nog hoop en toekomst is voor de Vlaamse landbouwsector! Daarnaast wil ik ook het Instituut voor Landbouw- en Visserijonderzoek danken voor het beschikbaar stellen van data die nodig waren voor de analyses en de verschillende bevoorrechte getuigen voor het geven van extra uitleg.

Aangezien kritische vragen de bouwstenen zijn van vooruitgang, dank ik de recensenten van artikels en de leden van de juryleden voor de terechte opmerkingen. Het kijken door verschillende brillen geeft je een meer objectief beeld op de werkelijkheid, hoewel afstand nemen niet altijd even gemakkelijk is.

Daarnaast wil ik ook alle collega's bedanken voor de vele gesprekken, de intense discussies, het luisterend oor als het even moeilijk ging...

Ook de vele studenten over de verschillende jaren heen mogen in dit rijtje niet ontbreken, want ze hebben me getoond dat niet alles altijd even vanzelfsprekend is, maar dat je mensen vleugels kan geven door ze in zichzelf te laten geloven...

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voor de kansen die ze mij gegeven hebben (ook al waren ze niet altijd vanzelfsprekend), voor de steun als het even moeilijker ging, en voor de vele gesprekken over 'de landbouw' zodat ook de link met de praktijk niet verloren ging. Dank voor de morele steun, maar zeker en vast ook voor de praktische ondersteuning, want zonder hen waren de laatste loodjes een stuk zwaarder geweest.

Tenslotte wil ik ook Peter in de bloemetjes zetten en danken voor de levensweg die we samen volgen. Het is niet de makkelijkste weg, maar het is een schitterende weg die ons steeds weer doet stilstaan bij de kleine dingen van het leven. Een weg die ons allebei de mogelijkheid geeft om onszelf te ontplooien zonder daarbij elkaar uit het oog te verliezen. En op die weg lopen twee vrolijke meisjes die ons leren om alles te relativeren...

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Mieke Calus

13 februari 2009

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ABC	Actual Behavioural Control
AEFL	Absolute External Financing Leap
A_t	Attitude toward the behaviour
B	Behaviour / Farm transfer
BLP	Business entity with separate Legal Personality
B_t	Attempt to perform a behaviour / Designated as farm successor
BVBA	Besloten Vennootschap met Beperkte Aansprakelijkheid
E	External influences
EARL	Exploitation Agricole à Responsabilité Limiteé
FADN	Farm Accountancy Data Network
F	Farm environment
FLU	Full-time Labour Units
FO	Farm Obsoleteness
GAEC	Groupements Agricole d'Exploitation en Commun
IS	Intention Stage
I_t	Intention / Intended farm succession
LV	Landbouwvennootschap
NP	Natural Person
P	Personal considerations
PBC	Perceived Behavioural Control
PDM	Principal Decision Maker
PS	Persuasion Stage

REFL	Relative External Financing Leap
S	Social environment
SCEA	Société Civile d'Exploitation Agricole
SD	Standard Deviation
SGM	Standard Gross Margin
SIM	Succession Intention Model
SN_t	Subjective Norms
SOLV	Solvency
SS	Succession Stage
TFA	Total Farm Assets
VLIF	Vlaams Landbouwinvesteringsfonds

Chapter 1 – Introduction

1.1. Rationale

The family farm is a cornerstone of the European agricultural model on which the present Common Agricultural Policy is based (Table 1.1) (Blanc and Perrier-Cornet 1993). The family farm is said to have contributed to economic and social development while adjusting its structures, production and management methods (Economic and Social Committee 1994).

Table 1.1 Importance of family farms in Western European agriculture (2005)

	Total number of agricultural holdings[a]	% family farms	% of total agricultural area utilised by family farms	% family labour units in agriculture
Belgium	51,540	93.1	91.3	80.4
Denmark	51,680	99.2	97.2	63.2
France	567,140	75.6	50.9	49.4
Germany	389,880	94.0	70.5	69.9
Ireland	132,670	99.9	99.5	93.0
Italy	1,728,530	98.3	72.4	82.0
Portugal	323,920	97.9	76.0	82.8
Spain	1,079,420	95.2	61.3	65.4
The Netherlands	81,830	92.9	90.1	63.1
United Kingdom	286,750	95.6	84.8	68.6

Source: Eurostat 2007

[a] According to Eurostat, an agricultural holding is 'a single unit both technically and economically, which has single management and which produces agricultural products. Other supplementary (non-agricultural) products and services may also be provided by the holding'.

Despite variation in size, outputs and production methods, family agriculture[1] represents some characteristics, linked to the shortage of space, the common needs and preferences of European people, and the historical and cultural background of farming in Europe, which are important enough to preserve: competitiveness, sustainability and multifunctionality (Economic and Social Committee 1999).

The long term survival of this cornerstone at macro level, is however based on the transfer of viable and competitive family farms at micro level. The last 25 years, the number of farms reduced and family farms became highly capital-intensive production systems (Chapter 2). This trend certainly may have positive effects for the young farmer (e.g. scale effects), but the financial burden must not be neglected.

Although scientists and policy makers recognise the role of farm transfer in the development of agriculture, there are still some lacks in scientific literature related to farm transfer. Most research focuses on the moment of farm transfer itself (Blanc and Perrier-Cornet 1993, Kimhi 1994, Errington 2002, Glauben *et al.* 2002, Corsi 2004), but less attention is given to the process that has to be followed before the effective farm transfer is effectuated.

1.2. Research objective

The overall objective of this research is to analyse the farm succession cycle with emphasis on the dynamic long-term aspects of farm transfer, taking into account the current changes in the agricultural landscape such as an increasing capital need, a shift from labour to capital as production factors, and an increase in legislation and administration. Based on a farm succession cycle model, different social, economic and legal aspects explaining intergenerational farm transfer are analysed.

The focus of this research is the intergenerational farm transfer, i.e. the transfer of the family farm from the parents to (one of) their children. This is one of the most common possibilities for successors to enter the business (Carlson and Dillman 1983), although the definition of the European Commission clearly includes the possibility of succession by a sib as well as (Fennell 1981). Figure 1.1 indicates the different types of farm transfer: besides intergenerational farm transfer, we distinguish intragenerational farm transfer (farm transfer between brothers and sisters), external farm transfer (transfer of the family farm to a person that not belongs to the core family) and limited farm continuation (sale of part of the production factors, e.g. production rights, but continuing the family farm to a smaller extent; at the limit, the farm family still lives on the homestead but the agricultural

[1] Within this research the concept 'agriculture' refers both to agricultural and horticultural production.

production is transferred to another farm). If no successor is available, then the farm stops, the farm properties are sold and the leaving farmer and his family have no link with the farm any more.

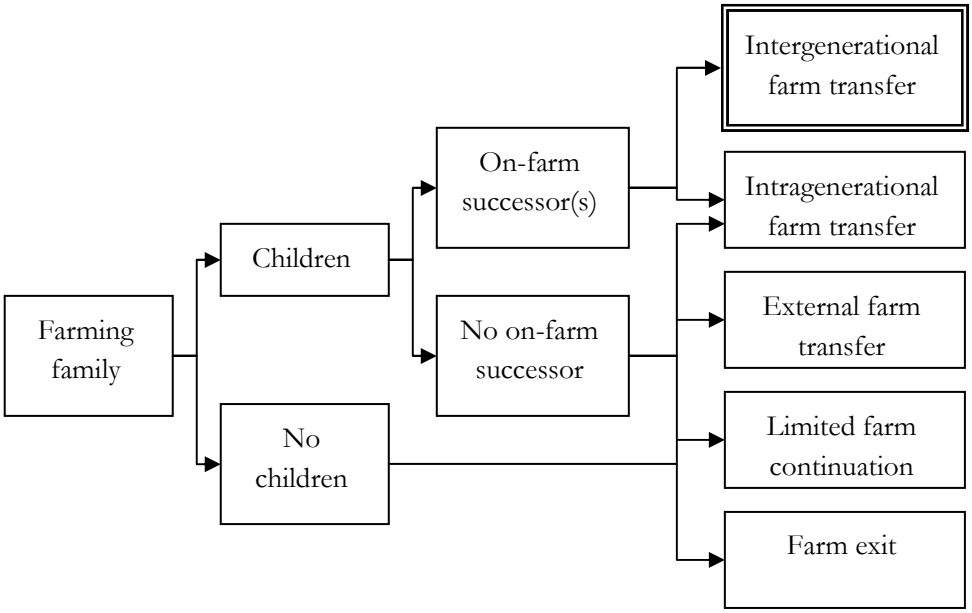


Figure 1.1 Possible trajectories of farm continuation

Source: own compilation based on Fennell 1981, Carlson and Dillman 1983

1.3. Thesis outline

The outline of this thesis is as follows.

Chapter 2 analyses the importance of the family farm, it opportunities and threats. Within this chapter the different rationales for the existence of the family farm are discussed.

Chapter 3 puts the intergenerational farm transfer in the foreground. A conceptual framework is elaborated and hypotheses are stated. The conceptual framework leads to a methodological model based on the farm succession cycle.

The decision to continue the family farm has major consequences for a person and his family, as there will mostly be a lifelong connection with the farm. Chapter 4 elaborates a succession intention model for farm succession, inspired by theory of planned behaviour of Ajzen (1985, 1988, 1991). The model makes it possible to analyse the process of succession intention already years before the farm transfer takes place. It reveals the factors that influence the decision to take over the farm in the different stages of the succession intention model.

Chapter 5 explores Total Farm Assets (TFA) as an indicator to identify farms with a higher probability of farm transfer. In the first part of this chapter, the theory of asset fixity and the theory of transaction cost economics are used to explain theoretically why higher TFA should reflect a higher intention to transfer the farm to the next generation, independent of farm type. The second part estimates the influence of the designation of a successor on the farm management by means of an econometric model.

In Chapter 6, the emphasis is put on the financing of farm transfer and the influence of financing farm transfer on farm practice. The importance of external financial loans is highlighted. An econometric model analyses the influencing factors of the external financing leap. The consequences of financing the farm transfer on the farm management are analysed.

The business legal structure of a farm also influences the farm transfer process. Taken all aspects of agricultural firms into consideration, a farmer will select the best solution under present conditions for the future of his farm. But this is only possible if he possesses all the necessary information on legal structures. Chapter 7 analyses first which legal structures exist in different Western European countries (France, Belgium, the Netherlands) related to agriculture. The comparison with neighbouring countries makes it possible to detect the shortcomings in the Belgian legislation related to legal farm statuses. Next, the knowledge and perception of farmers regarding the advantages and disadvantages of both natural persons and business entities with separated legal personality are analysed. The relation between the knowledge and the perception towards different legal structures in Belgium reveals the attitude related to different legal structures.

Chapter 8 integrates the findings of the research using the conceptual framework. The chapter composes a summary of the research, and gives recommendations for policy makers to increase the number of farm transfers by removing the main obstacles. The contribution of the research is twofold. On the one hand, the methodology based on the farm succession cycle, contributes to knowledge on the explaining factors of farm transfer. On the other hand, the results of the research can be useful to assist policy makers to improve the policy related to farm transfer. Finally, recommendations for further research are outlined.

Within the different chapters, some real-life examples are given to illustrate the farm succession and farm transfer in practice.

Chapter 2 – The family farm

2.1. Introduction

Within the European political institutional approach, the family farm is regarded as a cornerstone. This chapter analyses whether this is really the case, and if yes, what are the opportunities and threats of the family farm within a changing agricultural landscape.

Section 2.2 gives the definition of the family farm. Section 2.3 indicates the importance of the family farm based on facts and figures at both European and Belgian level. In section 2.4 we analyse the reasons of persistence of the family farm from a socio-economic and historical point of view.

2.2. Definition of the family farm

Based on a literature review (among others Loyns and Kraut 1992, De Haan 1993, Gasson and Errington 1993, Knutson *et al.* 1998) a definition of family farming encloses following elements:

- Both business ownership and managerial control are in the hands of family or near-family members;
- Business ownership and managerial control are transferred within the family over different generations;
- A majority of the labour is provided by the Principal Decision Maker[2] (PDM) and his/her family;
- A substantial part of the capital is furnished by the PDM and his/her family;
- The family lives on the farm;
- The family obtains a major share of its income from farming;
- The principals are related by kinship or marriage.

From sociological perspective, the family farm is associated with family virtues, such as solidarity, continuity and commitment; from economic perspective, the family

[2] This research refers to the PDM for decision making related to farm management and investment decisions, but in case of a family farm, often the partner will have an important influence in the decision making of the farm.

farm may be identified with entrepreneurial skills, choice, risk and individual achievement (De Haan 1993). The interaction between these two perspectives entails that family farming is more than a professional occupation. It reflects a lifestyle, based on beliefs and traditions about live and work. The family may be seen as the interface between the farm and the non-farm environment, filtering energies, resources and ideas between them (Arkleton Trust 1985, Bollman 2005).

The primary goal of the family farm is often not only profit maximisation as assumed in neo-classical models (Gasson *et al.* 1988), but also other goals such as maintaining control and passing on a secure and sound business to the next generation (Errington 2002) are important objectives for the farming family. It means, among others, that the business has a longer planning horizon, measured in generations rather than in years, and that securing long-term survival may be more prominent among the firm's objectives than maximizing short-run gains.

Family farms can be distinguished from family-owned business and industrial farms based on the fact that both the management and entrepreneurship are in the hands of the farming family and not shared with other persons (Table 2.1). The farming family provides labour, land and capital. Additional labour may be hired, most often on a seasonal basis (Gasson and Errington 1993), while land may be rented for expansion of the operation (Table 2.2). Further extra capital may be borrowed for supplies, machinery, and improvements.

Table 2.1 Different forms of agricultural production

	Labour	Management	Entrepreneurship
Family farm	Family	Family	Family
Family business	Family or hired labour	Family or hired manager	Family shareholders
Industrial farm	Hired labour	Hired manager	Shareholders

Source: own compilation based on Gasson and Errington 1993

A main feature is that the family owning the farm takes the (financial) risks, even if others deliver part of the production factors. This is not the case in the family owned business and industrial forms of farming where risks are shared among shareholders whether they have family ties or not. Besides the three models mentioned in Table 2.1, other farming structures of course exist such as cooperative farming (in which different families work together within a co-operative structure), collective farming and state farming. However, these types of farms are rare in Western Europe and are therefore not discussed.

Table 2.2 Proportion of agricultural land farmed by owners in 2000 (%)

Belgium	33
Denmark	75
France	37
Germany	37
Ireland	81
Italy	77
Portugal	74
Spain	73
The Netherlands	72
United Kingdom	66

Source: European Communities 2003

2.3. Facts and figures

2.3.1. The Western European perspective

During history, agriculture, as part of the broader society, experienced a lot of changes. The concept of the 'family farm' has changed over time. This is reflected in the evolution in the three production factors: land, labour and capital (Reinhardt and Barlett 1989). Not only there was a change in the used quantity of the different factors (especially an increase of capital), but there was also a shift between the three production factors, e.g. a shift from labour to capital.

When looking at European statistics in the period 1990-2005, the number of farms decreased in most of the countries, but there was an increase in the average agricultural area per farm (Table 2.3, Table 2.5). This process of reducing the number of productive units has fuelled an increase of professional businesses (Table 2.6). Due to labour saving technologies, the increase in farm size and economic size is not always reflected in a similar increase in labour units per farm (Table 2.4).

Small and very small farms still form the majority of farms in the European Union agriculture, particularly in the Southern and Eastern European countries. In these countries, the social base of agriculture remains strong and widespread. It should be noticed that these smallholdings still guarantee a large number of jobs. Many of these PDMs are full time employed, and in many other cases it is a matter of disguised unemployment, with all the social repercussions this has (Economic and Social Committee 2002).

Table 2.3 Total numbers of farms

	1990	1995	2000	2005	Δ 1990-2005
Belgium	85,040	70,980	61,710	51,540	-39%
Denmark	81,270	68,770	57,830	51,680	-36%
France	n.a.	n.a.	n.a.	567,140	n.a.
Germany	653,550	566,910	471,960	389,880	-40%
Ireland	170,580	153,420	141,530	132,670	-22%
Italy	2,664,550	2,482,100	2,153,720	1,728,530	-35%
Portugal	598,740	450,640	415,970	323,920	-46%
Spain	1,593,640	1,277,600	1,287,420	1,079,420	-32%
The Netherlands	124,800	113,200	101,550	81,830	-34%
United Kingdom	243,060	234,500	233,250	286,750	18%

Source: Eurostat 2007
n.a. : not available

Table 2.4 Total labour input in fulltime labour units per farm

	1990	1995	2000	2005	Δ 1990-2005
Belgium	1.10	1.11	1.20	1.35	23%
Denmark	1.17	1.53	1.15	1.17	0%
France	n.a.	n.a.	n.a.	1.51	n.a.
Germany	1.58	1.25	1.31	1.65	5%
Ireland	1.46	1.42	1.19	1.15	-22%
Italy	0.72	0.73	0.63	0.80	10%
Portugal	1.41	1.30	1.26	1.23	-13%
Spain	0.72	0.85	0.84	0.92	28%
The Netherlands	1.80	1.86	2.02	2.13	18%
United Kingdom	1.95	1.64	1.52	1.18	-39%

Source: own calculations based on Eurostat 2007
n.a. : not available

Table 2.5 Average utilised agricultural area (ha) per farm [b]

	1990	1995	2000	2005	Δ 1990-2005
Belgium	27.4	31.8	36.9	41.1	56%
Denmark	35.5	48.0	60.9	71.0	100%
Germany	30.7	54.1	61.5	74.9	144%
France	47.1	59.7	68.0	76.4	62%
Ireland	39.6	37.5	39.7	40.0	1%
Italy	10.3	11.7	11.8	16.0	55%
Portugal	11.6	12.5	13.1	22.5	94%
Spain	20.4	29.4	28.0	29.5	45%
The Netherlands	22.0	24.1	27.5	32.6	48%
United Kingdom	117.7	132.2	128.2	154.1	31%

Source: European Commission 2008

[b] The total utilized agricultural area of holding does not include areas used for mushrooms, land rented for less than one year on an occasional basis, woodland and other farm areas (roads, ponds, non-farmed areas, etc.). It consists of land in owner occupation, rented land, land in share-cropping (remuneration linked to output from land made available). It includes agricultural land temporarily not under cultivation for agricultural reasons or being withdrawn from production as part of agricultural policy measures. It is expressed in hectares (10,000 m^2).

Table 2.6 Average economic size unit [c] *of farms*

	1990	1995	2000	2005	Δ 1990-2005
Belgium	54.7	67.1	79.7	96.1	83%
Denmark	44.9	66.9	78.7	96.4	115%
France	38.7	49.0	69.5	77.8	101%
Germany	33.6	48.0	69.0	80.8	140%
Ireland	18.8	19.1	22.8	20.4	9%
Italy	12.9	15.6	17.2	29.6	129%
Portugal	5.7	6.8	7.8	12.9	126%
Spain	10.0	13.3	17.3	24.0	140%
The Netherlands	81.5	106.6	121.7	137.1	68%
United Kingdom	65.9	70.4	86.4	111.6	69%

Source: European Commission 2008

[c] Economic size of holding expressed in European size units (on the basis of the Community typology) (Formula: Total standard gross margin in Euro / 1200)

2.3.2. The Belgian perspective

In the period 1980-2007, the number of farms in Belgium has been halved while the total agricultural area remained more or less constant. As consequence, the total agricultural area per farm has doubled (Figure 2.1). Figure 2.2 indicates that there was a reduction of 72 per cent of farms smaller than 5 ha. The large farms (> 30 ha) on the other side increased with 44%. The agricultural landscape changes and farms become more capital intensive (Table 2.6). The standard gross margin of the average Belgian farm increased with 83 per cent or €49,680 between 1990 and 2005. As most of the farms in Belgium are family farms in sole proprietorship (87%), this means that family itself has to deal with a highly capital-intensive production system.

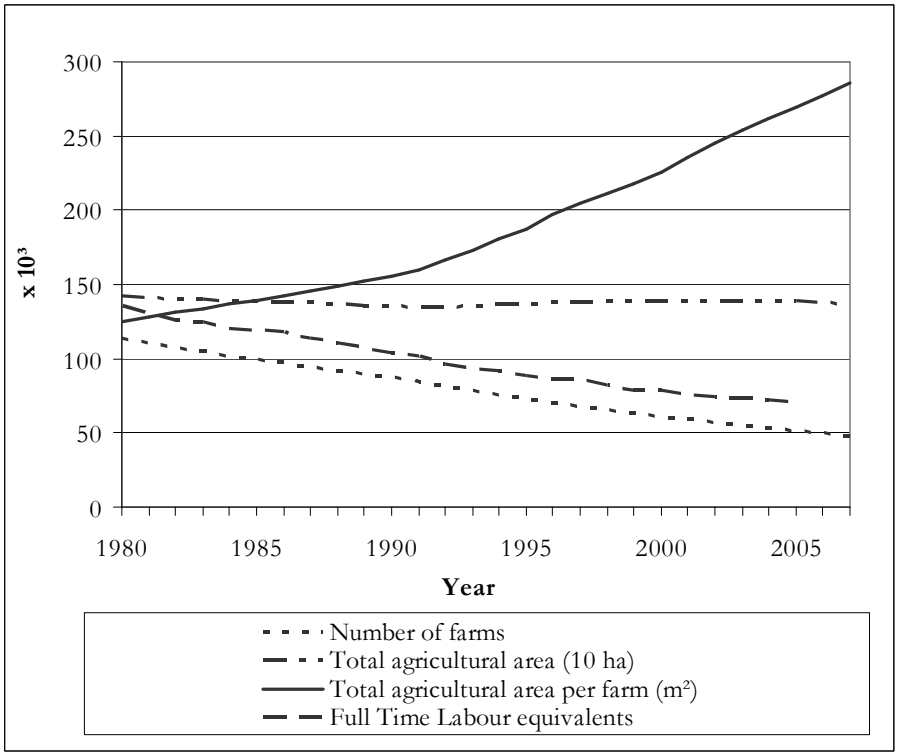


Figure 2.1 Evolution of farms and farm size in Belgium

Source: Federal Public Service Economy SMEs Self-employed and Energy 2007

In the period 1990 – 2005, the labour productivity on the farms increased, as there was a high increase in economic size and a small increase in labour units on the farm. In 2005, the average amount of full time labour units on Belgian farms was 1.35 (Table 2.4). Translated to the family farm, this implies that on the majority of farms, the PDM and his/her partner or child(ren) will be involved in farming, sometimes supplemented with an off-farm job. But on the other hand, increasing incomes in non-agricultural sectors of the economy make agricultural activity comparatively less

attractive for prospective successors[3], unless it provides comparable incomes. In Belgium, the average farm income is 70 to 90 per cent of the average income outside agriculture (Vilt 2008), the PDMs have a high burden of debt and these small independent farms have to bear the entrepreneurial risk.

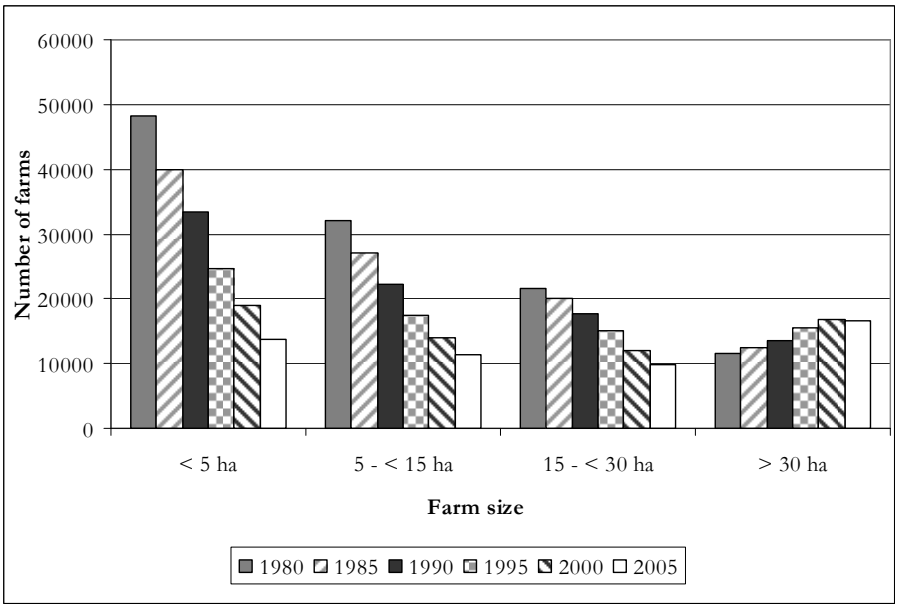


Figure 2.2 Changes in number of farms, related to farm size

Source: Federal Public Service Economy SMEs Self-employed and Energy 2007

The fall in the number of farm transfers started some decades ago, but from 1994 on, as showed by Figure 2.3, it has sharpened. The sharp decrease in the years 1999 and 2000 is ascribed to a sharp decrease in farm transfers in Flanders. The decrease from the year 2001 is attributed to a decrease in farm transfers in the Walloon provinces (Table 2.7). In 2006 and 2007, the absolute and relative number of farm transfer in Flanders and the Walloon provinces has increased. The increase in Flanders can partly be explained by a change in the regulations of the establishment support (Section 6.2.2.3), but also a new trust in the future of agriculture can stimulate farm transfer. The study of Gellynck *et al.* (2007) confirms this positive tendency by means of increasing target figures in the different Flemish agricultural sub sectors (e.g. expected increase of end production value of potatoes, vegetables in 2013).

[3] Within this research, we refer to the successor as a male person because the majority of successors in Flanders are male, but by doing so, we want to include both male and female successors.

Table 2.7 Comparison of farm transfer in Flemish and Walloon part of Belgium

	Flanders			The Walloon provinces		
	Total number of farms	Absolute number of farm transfers	Relative number of farm transfers	Total number of farms	Absolute number of farm transfers	Relative number of farm transfers
1995	48,104	1,223	2.5%	24,719	654	2.6%
1996	46,062	1,225	2.7%	23,652	673	2.8%
1997	44,529	1,094	2.5%	22,829	666	2.9%
1998	43,509	1,035	2.4%	22,128	563	2.5%
1999	42,377	754	1.8%	21,510	512	2.4%
2000	41,047	699	1.7%	20,843	543	2.6%
2001	39,276	631	1.6%	19,776	386	2.0%
2002	37,895	666	1.8%	18,989	389	2.0%
2003	36,681	658	1.8%	18,505	354	1.9%
2004	35,486	667	1.9%	17,712	367	2.1%
2005	34,519	494	1.4%	17,274	314	1.8%
2006	33,272	608	1.8%	16,557	325	2.0%
2007	31,984	700	2.2%	16,008	366	2.3%

Source: own calculations based on Federal Public Service Economy SMEs Self-employed and Energy 2007

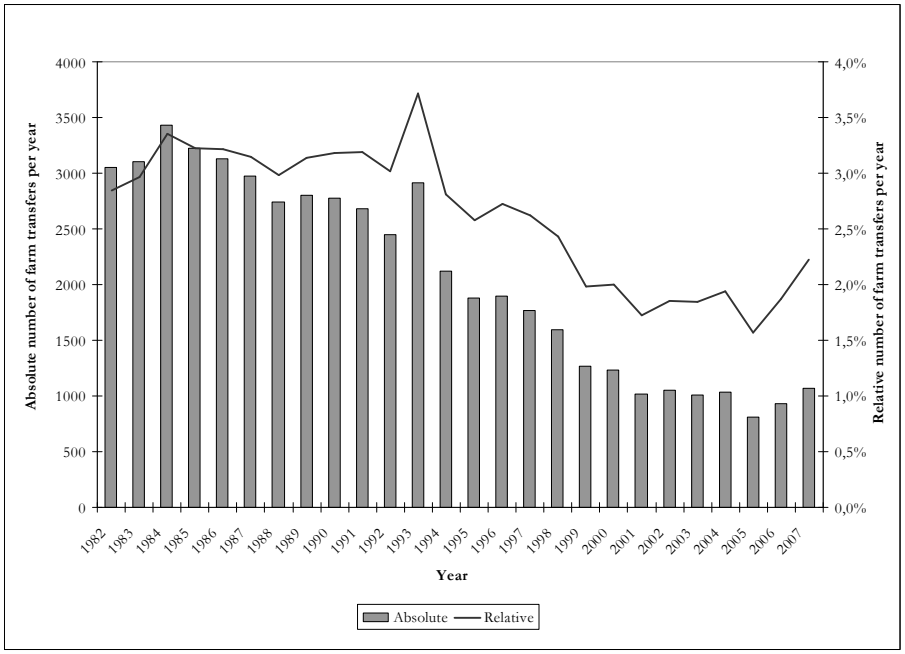


Figure 2.3 Number of farm transfers per year

Source: Federal Public Service Economy SMEs Self-employed and Energy 2008a

The number of PDMs under age 35, has decreased enormously since 2000 (Figure 2.4). In the period 1980 – 2005, the absolute number of PDM older than 50 that reported to have a successor has halved (Figure 2.5). Regarding the farm succession pressure, there are no significant differences over time: on average 17 per cent of the PDMs has designated a successor, 58 per cent of the PDMs states not to have a successor, and 24 per cent is still in doubt about the succession perspectives of the farm (Figure 2.6). The farm succession pressure indicates that the minority of the family farms will be transferred within the family to the next generation. The land of the PDMs exiting the farm sector will be absorbed by the remaining farms, increasing the average farm size and the capital intensity of the farm (Figure 2.7).

The increased farm size, the intensive labour demand and the capital intensity of the family farm, make it not evident for farmers' children to take over the family farm. If fewer successors take over the family farms, the average farm size will continue to increase, leading to improved farm viability, but the question is whether a sole owner can still carry the financial burden.

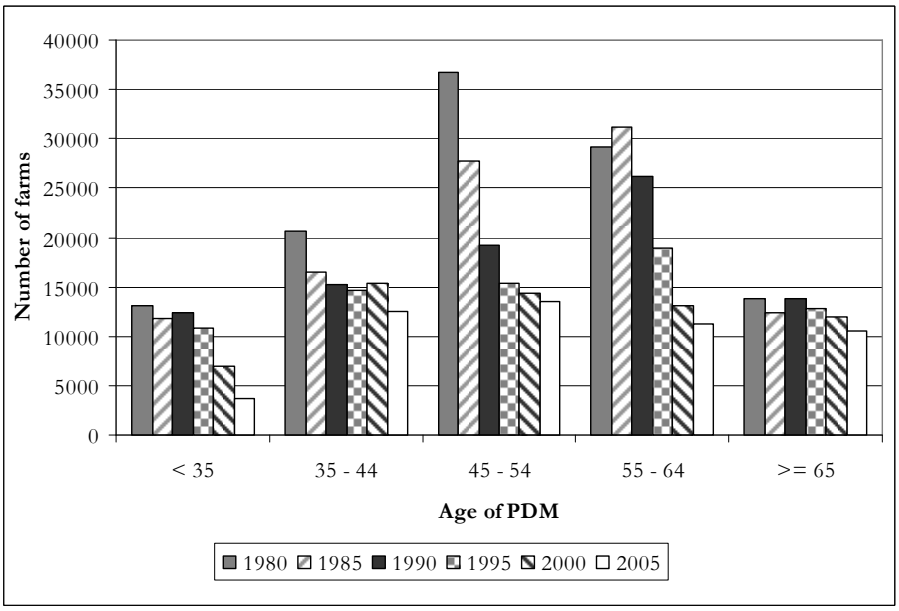


Figure 2.4 Changes in number of farms, related to age of PDM

Source: Federal Public Service Economy SMEs Self-employed and Energy 2007

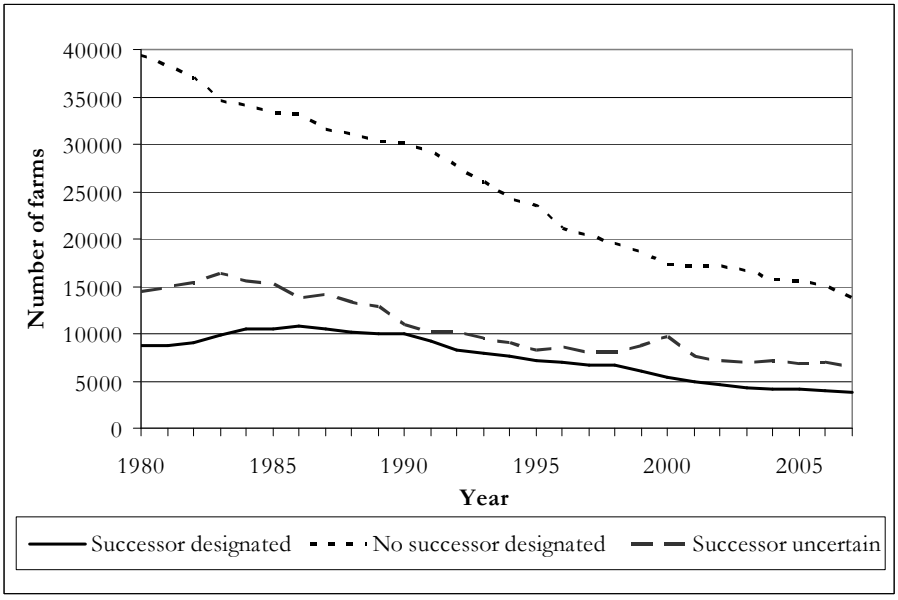


Figure 2.5 Evolution of the designation of a successor on Belgian farms in absolute numbers

Source: Federal Public Service Economy SMEs Self-employed and Energy 2008a

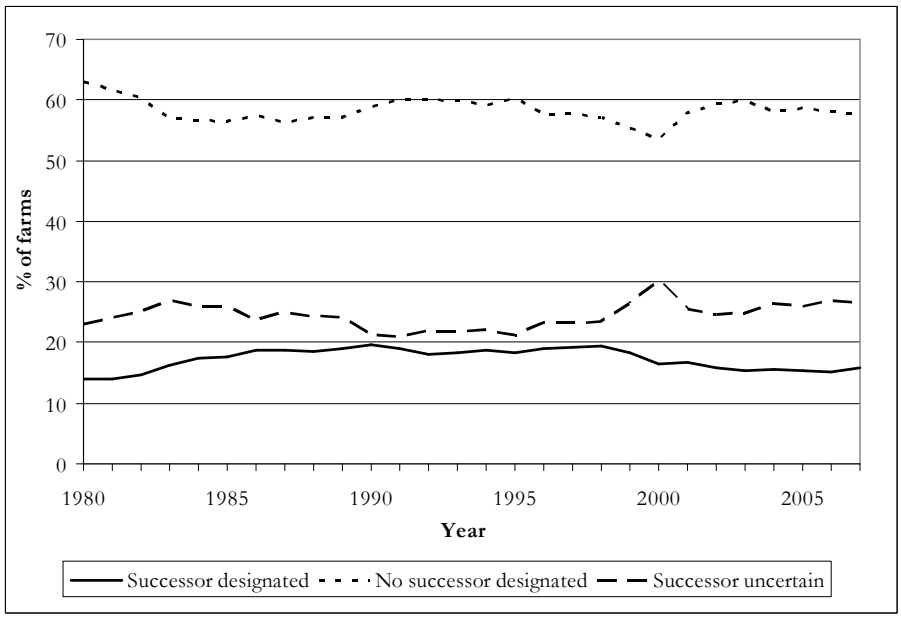


Figure 2.6 Farm succession pressure on Belgian farms

Source: own calculations based on Federal Public Service Economy SMEs Self-employed and Energy 2008a

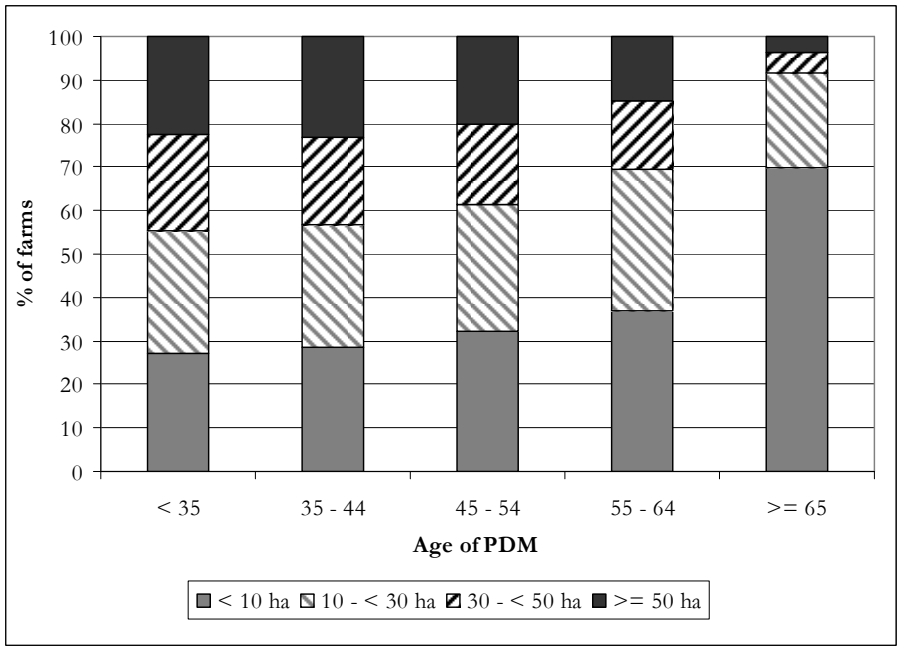


Figure 2.7 Relative amount of farms, related to farm size and age of PDM

Source: Federal Public Service Economy SMEs Self-employed and Energy 2006

2.4. Rationale behind family farming

The persistence of the family structure in farming is not evident and inconsistent with predictions made in literature. Karl Marx (1818-1883) was among the first to predict a further concentration and scale increase of farm structures and thus the gradual disappearance of peasant agriculture in capitalistic societies. Family farms would be absorbed by the large farming industry using modern technologies and employing hired labour (Orwin 1930, Schmitt 1991, Gasson and Errington 1993). Also the Fordist model of industrial development was used to explain further scale increases and industrialisation of farming (Boyer 1989, Sauer 1990). However in practice, we observe that in industrialized countries family farms have not only survived, but even relatively expanded. In stead of the development of a main stream modern farming model, we observe today a wide range of multifunctional family farming models (Van der Ploeg *et al.* 2002).

In the section 2.4.1 and section 2.4.2 we review the main arguments and rationales that have been used to explain the existence and persistence of family farming: the socio-economic rationale on the one hand, and the historical rationale on the other hand. Although this may also be discussed from philosophic, sociological or other point of views, we limit our analysis to the two most common but complementary explanations used.

2.4.1. The socio-economic rationale

2.4.1.1.The agricultural household model

In the family farm, household and enterprise are combined in one institutional entity (Aït Abdelmalek 2004). No separation of the domestic family life from the work responsibilities exists, as is common in modern industrial organisations (Pfeffer 1989). Chayanov (1888-1939) in his famous writing on peasant agriculture described the family farm as an economic form which differs from capitalist farming, especially because it is run by a family without hired outside wage labour (Shanin 1986). This was in a time when farming was mainly labour based and not technology based as is now the case. But still his ideas remain valid because based on his Theory of Peasant Economy (Chayanov 1923, 1986) an agricultural household model can be developed which provides a framework for analysing the behaviour of the farming family related to decisions of consumption, production and the allocation of time between farm work and home time (family maintenance, reproduction, social obligations, sleep and leisure). In his most simple form the economic household model assumes that the family farm maximizes utility taken into account a number of constraints (Singh *et al.* 1986, Findeis *et al.* 2003, Taylor and Adelman 2003).

Max $U(C_F, C_{NF}, l)$ [1]

Constraints :

- Production: $Q = f(L, X)$ [2]
- Time: $T = H + l$ [3]
- Full Income: $P_F (Q - C_F) + W(H - L) = P_X X + P_{NF} C_{NF}$ [4]

With:

U = Household utility

C_F = Food consumption

C_{NF} = Non-food consumption

l = Leisure

Q = Output

L = Labour used in production (both household labour and hired labour)

X = Other input used

T = Total time available to the household

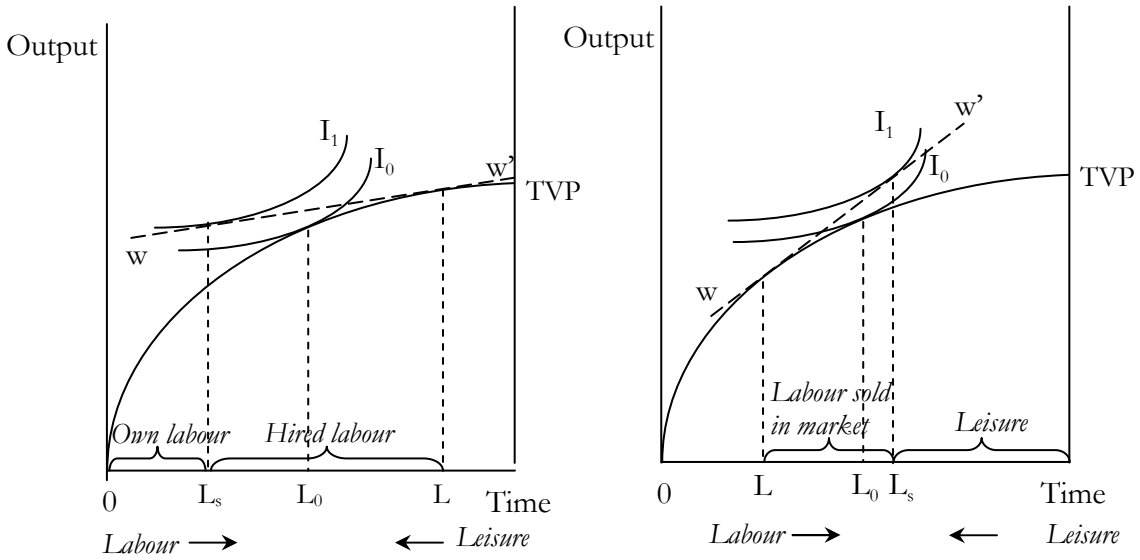
W = Wage rate

H = Household labour

P_i = Price of commodity i (i = F, NF, X)

The household utility U (see [1]) is a function of the household food consumption (C_F), the household non-food consumption (C_{NF}) and household leisure (l). Utility is maximized subject to the production function [2], the household total time constraint [3] and the household income constraint [4]. The family farm produces with the labour and other inputs available for production. The amount of labour available for farm production depends on the amount of labour provided by the family members, the amount of hired labour, the amount of labour sold in the market, and the desired amount of leisure time (Figure 2.8). Taken into account the farm production and the time constraints, the full income of the household consists of the market surplus and the labour surplus that are used to pay the other input used and the non-food consumption. In case of relative low wages the PDM can increase his income level by making use of hired labour. In that case, the amount of own labour at income level I_1 is lower than the amount of own labour at income level I_0: more leisure time is available. In case of relatively high wages, the PDM can

increase the income level by selling his own labour on the market (LL_s). By doing this, the total amount of labour has increased (OL_s) and the amount of leisure time has decreased, compared to the situation at income level L_0. Although a profound discussion is out of the scope of this thesis, it shows the usefulness of the framework to provide insight in the decision making of PDMs with respect to labour and other input allocation.



a. Net buyer of labour (relatively low wages) b. Net seller of labour (relatively high wages)

Figure 2.8 Chayanov model with labour market[4]

Source: Department of Agriculture and Resource Economics - NC State University 2007

The Chayanovian approach takes into account an opportunity cost of family labour (Findeis *et al.* 2003). However in practice, the internal resources of the family farm are not valued at the prevailing market prices but at an internal price leaving a surplus that can be used for the remuneration of family labour, but also for reproduction or expansion investments of the farm or savings (Friedmann 1978, Van der Ploeg 2000). PDMs have a greater flexibility than other structures to distribute the net returns of the family farm among (1) expansion of production, (2) family consumption or (3) investment in production factors, allowing them to compete successfully with industrial forms of farming focussed on returning a profit. In this way, family farms have a higher ability to withstand less prosperous times.

[4] TVP: Total Value Product (production function); I: income level

2.4.1.2. Family labour versus hired labour

The fact that labour is mainly provided by family members is a major characteristic of family farms. With modernisation of farms, the prevalence of family farming has been strengthened due to the greater substitution of the hired labour input by machinery relative to family labour input by machinery (Schmitt 1991). This contraction of hired work-forces has been a function of the cost-price squeeze in agriculture, the increasing cost of labour, and the technological advance in the farming industry where expansion of individual firms is highly limited by availability of land (Winter 1984), but also of the higher transaction cost of hired versus family labour (Section 2.4.1.3.2): hired workers have to be considered as an imperfect substitute for family labour and family farms are a response to the difficulty of supervising workers who, for obvious physical and geographical reasons, cannot be gathered in a single location (Schmitt 1991). These evolution made that agriculture has been gradually more dominated by family farms in terms of labour input (Hill 1993).

Table 2.8 analyzes as an example the evolution in Belgium from the end of the nineteenth century. At that moment hired labour made up to 41 per cent of total agricultural employment in Belgium. This was favoured by the relative low wages in agriculture leading to a pull effect as illustrated in Figure 2.8a. However, between 1880 and 1980, due to technological evolution, the importance of hired labour in agriculture declined, whereas the family labour still increased until 1950. It is only from 1950 due to a pull effect from industry that family labour in farming has decreased because the rise in industrial wages increased the opportunity cost of hired labour as predicted in Figure 2.8b. Further, the reduction of the official working hours due to labour regulations made that people are less willing to provide hired labour outside the official working hours, but reduced on the other side the opportunity cost of labour and thus the competitiveness of part-time farming. Another factor is that improved schooling and transportation enabled members of the farming family to work outside the farm, making the labour market less imperfect and closing the gap between market wages and opportunity cost of farm labour (Swinnen *et al.* 1993). Although after 1980 the total number of farmers declined further, the relative and even absolute amount of hired labour on the remaining farms increased. The decreased family size and the decreased amount of unpaid labour by neighbours need to be compensated by hired labour of which the market wages are closely linked to the opportunity cost of farm labour.

Table 2.8 Labour share in Belgian agriculture

	Wage labour units	Percentage of total labour (%)	Family labour units	Percentage of total labour (%)	Total labour units	(1880= 100%)
1880	230,600	37.1	391,600	62.9	622,200	100.0
1895	262,400	41.1	376,900	58.9	639,300	102.7
1910	217,300	34.0	421,300	66.0	638,600	102.6
1920	120,600	25.6	350,200	74.4	470,800	75.7
1929	95,600	18.9	410,500	81.1	506,100	81.3
1937	77,300	15.8	410,600	84.2	487,900	78.4
1950	43,700	8.9	445,100	91.1	488,800	78.6
1960	22,100	6.6	312,400	93.4	334,500	53.5
1970	11,700	6.1	178,900	94.9	190,600	30.6
1980	5,300	3.9	130,200	96.1	135,500	21.8
1990	5,900	5.7	98,400	94.3	104,300	16.8
2000	7,300	9.3	71,100	90.7	78,400	12.6
2005	14,100	20.1	55,900	79.9	70,000	11.3

Source: Swinnen et al. 1993, Federal Public Service Economy SMEs Self-employed and Energy 2006

The advantage of using family labour (supplemented by unpaid labour provided by neighbours) is that family labour can adjust to changes in labour demand resulting from (seasonally) changes in production. This provides an essential buffering system that is not available to non-family farm businesses (Wallace *et al.* 1994). By doing so, family labour overcomes the structural requirements for surplus production, but at the same time, it increases flexibility in personal consumption.

Within the family farm, wages are not fully paid out or at least only for short periods of the family life cycle, enabling the family farm to reduce fixed costs (Winter 1984, Gray 1998). The balance between labour costs and consumable income is more in favour of family labour compared to hired labour. When the family members are getting older, it is also more rational to remain in the agricultural sector, as the marginal benefit of the off-farm employment will be lower than the marginal benefit of the on-farm employment.

In general, family farms use highly flexible and different strategies to survive under changing market and production conditions. Attention has been drawn to the capacity of the small family farm to survive under adverse conditions by supplementing farm income or simply by tightening belts and accepting a lower income (Gasson *et al.* 1988). However at the present, cheap family labour, willingness to accept a low standard of living in return for unremitting hard work, acceptance of traditional authority, lack of clear division between work and leisure and an emphasis

on values like independence, may be less appropriate for survival than they were in the first half of the twentieth century (Gasson *et al.* 1988).

2.4.1.3. Scale effects and transaction costs

Not only labour cost plays an important role in the survival (or non survival) of the family farm. According to economic theory, the optimal farm structure minimizes production costs in a competitive environment. If a farm structure cannot meet these conditions, it will disappear. In this context, scale effects and transaction costs are two major economic forces playing a determining role in the optimal farm structure.

2.4.1.3.1. Scale effects

In economic theory, the increase in outputs related to the increase in farm scale, is indicated as economies of scale. Scale effects tend to increase the optimal farm size, but at diminishing rate (Hallam 1991). Literature on scale economies suggests that scale economies are linked to an increase in capital inputs, but diseconomies occur as a result of increases in farm area (Visser 1999).

Since the 1950s, there has been a strong increase in capital-intensive farm technology. Within the framework of a limited budget, the PDM has been able to improve returns to farming by investments in the efficient application of technology rather than by acquiring more land (Swinnen *et al.* 1993, Blanc 1994). Although, the increase in income related to the technological improvements was limited or even non-existing for the average farmer, referred to as the treadmill theory of Cochrane (Cochrane 1958): at moment of introduction of a new technology, the first few farmers who adapt it, can benefit by lowering their production costs, and the overall production does not increase to that extent that the selling prices lower. Early adopters can benefit from these technological improvements. When more farmers take up the new technology, the total production increases and the selling prices fall. The average farmer is forced to adopt the technology in order to survive, but not necessarily to increase his profitability.

According to Schmitt (1991), the gains achieved by increasing farm size due to economies of scale are relatively small compared to the size that can be achieved by optimal use of farm household labour as labour efficiency has increased enormously over the twentieth century due to technological innovations.

Within the context of family farming, we cannot assume that 'small' and 'family' are interchangeable labels (Hill 1993), but we do observe that family farms are mostly of sub optimal size as compared to sizes providing maximum profits, although the economies of scale cannot be neglected. The economies of scale in European

agriculture are reflected in the increase of the average economic size unit (Table 2.6), the average utilised agricultural area per farm (Table 2.5), in combination with a limited increase of the average labour input per farm (Table 2.4). The increased capitalisation of the family farm, related to the increased scale of the farms, entails that especially at the moment of farm transfer high amounts of capital are needed to continue the family farm.

Economies of scale open perspectives to non-family based agricultural production systems, e.g. agricultural cooperatives and super large farms in former socialist states. But these production forms are not of major importance in Western European agricultural production as the economic rationale of these non-family based agricultural production systems seems to be solely due to economies of scale and important factors like management and human resources are omitted in this traditional view (Levay 1983, Johnson and Ruttan 1994, Gorton and Davidova 2004, Jambor 2007). In agricultural cooperatives, producers can better exploit potential economies of scale from their shared use of pooled factors of production, than if they remained individual farmers. But the major difficulties in the production cooperatives are problems of performance motivation and free-rider behaviour – which are generally not faced by family farms – and the conflict between individual interest and group interest.

2.4.1.3.2. Transaction costs

Transaction costs are defined as 'the costs that arise when individuals exchange ownership rights to economic assets and enforce their exclusive rights' (Eggertsson 1990). Among other things, transaction costs include the costs related to monitoring and enforcing contracts. In 'the Nature of the Firm', Coase (1937) argued that the market only functions as the perfect neo-classic market model predicts as long as it is able to operate without causing conflicts, thus at zero or low cost. When the market use cost start to exceed the costs of organising the exchange within the firm it becomes profitable to abandon the market and organise the exchange internally (Coase 1937). Figure 2.9 indicates that at the moment that the resource costs to make a good exceed the transaction costs of buying the good, the market mechanism is used. Opposite, the family farms are expected to produce within the firm if the transaction costs to buy the good are higher than the resource costs to make the good. If both the resource costs and the transaction costs are high, hybrid governance structures will be developed such as e.g. cooperation or other forms in between pure market and individual firms.

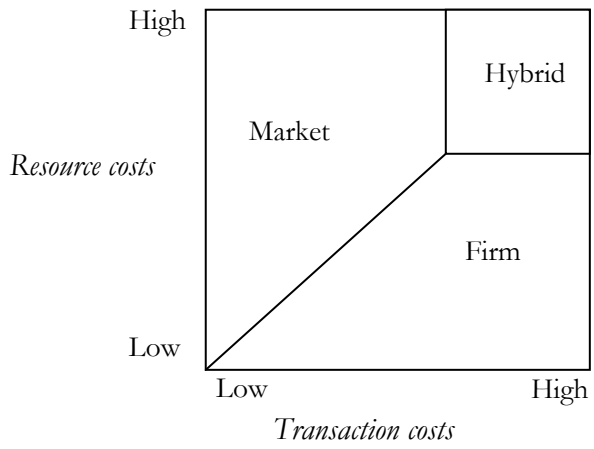


Figure 2.9 Influence of resource and transaction costs on expected transaction governance mode
Source: own compilation based on Rangan et al. 2006

The trade-off between 'cost of using the price system' and the 'cost of organisation', explains the evolution in the farming sector over the last decades. Until the mid-nineteenth century, the family farm was involved in all stages of the chain, from producing to processing goods for retail consumption. There was limited input from the market. The introduction of technology led to the rise of separate specialised firms at the beginning and the end of the production cycle (e.g. equipment, fertiliser, marketing, processing, transportation). For these production stages, the cost of using the price system was lower than the cost of organisation within the family farm (Allen and Lueck 1998). Farms may be squeezed upstream and downstream by horizontally and vertically integrated capital, but the family farm mainly controls the purely biological growth stages of farm production and remains independent and small relative to the organization with which they do business (Roberts 1996).

Where the neoclassical economic theory assumes that the most efficient firm will tend to survive, the transaction cost theory states that the most efficient governance structure will ultimately prevail in a competitive economy (Williamson 1979, 1996).

The transaction costs are based on asset specificity, uncertainty and frequency. Related to the asset specificity, the following factors explain why the family farm is still an optimal institutional solution to the difficulty of monitoring and supervising workers in agricultural production:

- Although farming skills are based on scientific knowledge, they are still very location and crop specific: the scientific knowledge has to be adapted to heterogeneity of soils, weather conditions,… Beside education, the family members acquired this specific knowledge during childhood and it is a by-product of growing up on the farm.

- Due to technical reasons, the workers cannot be gathered in a single location and be easily supervised. Family labour does not need supervision, since family members are involved in the income it provides (Corsi 2004). According to Pollak (1985) the family farm is seen as the organisational solution to the difficulty of monitoring and supervising hired workers. This implies that transaction costs are increasing with rising farm sizes and greater numbers of hired workers per farm.
- In agricultural production, labour contracting is more difficult because effort is harder to observe, while outcome is not directly linked: the outcome of the production process is seen at a later stage than the effort itself. Employers will rely on the 'reputation' of the employee, and this is facilitated when there are close links (e.g. family) or loyalty between farm worker and farmer (Wiggens 1991). Over time, workers become more socially dependent from the farmer, and loyalty and reputation decline as motivating factors, but due to technological innovations, the output per worker has increased (Swinnen *et al.* 1993).

Beside the importance of human asset specificity, family farms can also better anticipate the changing consumer demands due to their flexibility and the close connection with the agricultural output:

- At the moment that the consumer demand is changing, the agricultural producer has to adapt the production process to remain competitive. The flexible family farm structure can effectively anticipate the changing consumer demands.
- In the last decades market trends tend to push towards an increasing quality diversification of food. Diversification of agricultural products requires location-specific technical skills.

The asset specificity argument of the agricultural production may explain why the argument that production is generally less costly when organised in larger units with a considerable number of workers within one location (Bowles 1985) does not apply to agriculture. This asset specificity, and in particular the linked control and monitoring cost, explains to a large extent why family farms were able to withstand the industrial agriculture in the past.

A second element of the transaction cost theory is uncertainty. Uncertainty is an exogenous factor that influences farm production. Random shocks (weather, biological factors) influence the production and cause heterogeneity in production. Flexibility enables family farms to cope with factors affecting the production and to absorb the random shocks.

Finally, the frequency of transactions has also an influence on the transaction costs. Seasonality and the lack of continuous operations are the main features that distinguish agricultural institutions from 'industrial' organisations. Farm workers

need to be flexible and able to shift from one task to another. In farming, it is impossible to organise the labour force on the basis of a minute division of labour. Seasonal parameters (e.g. production cycles) limit gains from specialisation and cause timing problems between stages of production. Greater efficiency due to economies of scale is therefore limited. When the production cycle is relatively short or when the seasonal factors can be reduced by means of controlled environments, and when the production process can be easily monitored in terms of input and output, other forms of agricultural organisations often overshadow family farms (e.g. industrial pig and poultry production, greenhouse production).

2.4.2. The historical rationale

Not all authors are convinced of the socio-economic arguments as grounds for the persistence of the family farm (e.g. Christensen 1991, Swinnen *et al.* 1993). Although they recognise that there are limits to growth and some economic arguments for family farms, they express the opinion that the survival of small family farming is mainly a political choice because the growth of farms in many countries is restricted by law as the politicians try to protect smaller family farms. To understand the role of government in the survival of the family farm, we might have a look in the Western European history of farming. The tendencies described are a generalisation of recent history, with certainly differences according to the specific prevailing conditions and specific political settings in each country.

2.4.2.1. The eighteenth and nineteenth century

In the eighteenth century, there were already different tendencies related to the occurrence of family farming in Western Europe. In Great Britain, the tripartite structure of agriculture that emerged, was based on a division between (1) landlords providing land and eventual capital, (2) tenants providing capital and labour and (3) hired labourers providing a high share of labour. This model was seen as a model for other industrialising nations (Gasson *et al.* 1988, Tracy 1989, Demblon *et al.* 1990, Gasson and Errington 1993). The enclosure in Great Britain enabled large enterprises to further expand, and increased the productivity of the farms, but smaller farmers lost their right to use to common grounds. There was a high increase in population and people started to work in the industry.

In other Western European countries such as Belgium, there was a fragmentation of farms that is explained by the law of inheritance within the Code Napoleon, a rapid increase of the population, a slow increase of commercialisation and the limited availability of land (Seghers 2008). The farmers were clung to the small family farm and the alternatives were limited due to personal attachment with the firm and the land. This opened perspectives to intensive production.

The nineteenth century is characterised by large possibilities for technical improvement in agriculture. However, the Industrial Revolution hardly reached the rural areas due to deficiencies in transport and communication systems and the little flow of new ideas into the countryside (Tracy 1989). As there was a need for low-priced food for the industrial workers in order to maintain wages low and as the domestic food production was not sufficient to the total demand, food was imported from overseas with large imports from 1870 on, referred to as the agricultural invasion (Craeybeckx 1980, Tracy 1989). Within this context of free trade, liberal legislations replaced protectionist measures. However, grain prices collapsed, farmers went bankrupt and independent family farming was doomed to disappear (Gasson *et al.* 1988, Tracy 1989, Demblon *et al.* 1990, Van Molle 1990). Some governments did not continue their liberal legislations, but returned to protectionism, although differences occurred between countries: Great Britain and the Netherlands depended largely on trade and continued their free-trade system; Belgium needed the import of basic commodities, but specialised products were protected; in Germany and France, protectionist measures were installed. To overcome this crisis, there was a shift from crop production to the small scale livestock production and modern horticulture, which was mostly suited for smaller family farms (Tracy 1989). By doing so, family farms anticipated the increasing purchasing power.

It was in this period that the Conservative Catholic movement strengthened his power in the countryside. At the end of the nineteenth century, liberal political parties relied on support of the industrial entrepreneur and the socialist party increased its power by supporting the industrial workers. The establishment of democratic voting systems (Belgium: 1893) made that the importance of the small farmer increased for conservative catholic groups. In exchange for political support the conservative catholic parties in government established policies and regulations that benefited farmers. The conservatives supported the family farm because the family was regarded as the cornerstone of a religious society and they thought that the family farm, as small independent profession, could combat the socialist influence on the countryside (Gasson *et al.* 1988, Demblon *et al.* 1990).).

2.4.2.2. Around the first and second World War

At the beginning of the twentieth century, there was a more prosperous situation for farmers and a better agricultural environment (Tracy 1989). Different kinds of cooperative societies in favour of the small family farm, emerged (e.g. milk and fertilisers cooperatives) (Seghers 2008). Farmers' organisations stimulated governments to induce protectionist measures, especially in low competitive sectors. This was desired in order to maintain high agricultural prices, compared to the international standards.

The First World War changed the production environment of Western European agriculture. During the war, the agricultural production decreased as the production capacity was to some extent destroyed. But nevertheless, the farmers still benefited as the price of their produce was relatively high. The first years after the war were in general characterised by scarcity, hunger and international food deliveries (Ortmayr 2007). But farmers were able to invest in land and machinery. The increased production in combination with protectionist measures by government resulted in an overproduction in the 1930s. At the end of the interbellum period, there was a revival of the economy.

The first years after World War II, the agricultural policy had the aim to end all compulsory measures that were established during the war and to liberalise the sector (Bublot 1980, Van Molle 1990). The immediate concern all over Western Europe was to raise agricultural production as fast as possible to combat hunger and famine. Beside the problem of food shortage, there was a general need to save foreign exchange by keeping imports as low as possible (Tracy 1989). Due to the American help under the Marshall plan, in which agriculture was treated equally as the other sectors, the recovery was rapid and successful.

The post-war years were also important for the increasing influence of farmers' unions in policy making (Tracy 1989, Van Molle 1990). Because of equal representation of rural areas, a high number of farmers or people with interest in farming and rural areas were elected often with the support of the farmers' unions (Tracy 1989). At that moment, the institution of the family farm became a political goal in itself. In theory, agricultural legislation and policies were indifferent regarding the kind of farm organisation. In reality, politicians mainly supported independent family farming. Governments funded an extensive network of agricultural research, extension and education institutions. Extension networks aiming at disseminating new agricultural technologies to individual farmers were organised in combination with farmers' organisations (Craeybeckx 1980). The organisation of agricultural credit supply through farmers' organisations and cooperatives was actively supported. By doing so, the government improved gradually the competitive position of the family farm. At the end of the fifties (and moment of negotiations about CAP and other international treatments) agriculture was still mainly dominated by small family farms who were organised in strong farmer's unions.

2.4.2.3. The Common Agricultural Policy

The need for food self-sufficiency explains why the treaty of Rome (1957) and the Stresa agreement emphasized the importance of an efficient agriculture. In 1958 with the introduction of the Common Agricultural Policy (CAP), the European agricultural policy aimed mainly at making farming more efficient and productive in order to protect food supply, while keeping price of food products low and

safeguarding farmers' income. We hereby refer to the five principles of Article 33 (39) of the treaty of Rome (CAP Monitor 2005): (1) To increase agricultural productivity through rational development of agriculture towards the optimum utilisation of the factors of production; (2) To ensure a fair standard of living for agricultural producers; (3) To stabilize agricultural markets; (4) To guarantee regular supplies of food to consumers; (5) To ensure reasonable prices of food to consumers. These objectives were attained in the first place by means of market and income support measures.

The CAP favoured the modernisation of agriculture through markets and technical improvement and enabled industrialisation of the agricultural production process with separation of production and environment (e.g. industrial pig production). But for some time, the Mansholt Plan, including a fundamental reform of the CAP, was not established due to a well-organised and institutionally entrenched farm lobby (Tracy 1989, Murdoch 1995). Some family farms could not counterbalance low world market prices by a sufficient increase in production, but the idea, developed in the 1960s as 'the theory of peasantry' (Mendras 2002), that Europe's farmers deserve a special treatment because they are farmers was never likely to offer a plausible long-term rationale for state support.

During the early 1970s, a combination of falling world market prices for agricultural products, a decrease in the job opportunities outside agriculture, and a growing appreciation of the cultural significance of the family farm shifted the 'restructuring rationale' to 'state assistance' as dominant policy principle under the CAP (Potter and Lobley 2004). Although the CAP did not mention the family farm as a target group (Moehler 2003), the lobby of farmers' unions was attentive to make that the family farm was not disfavoured in the agricultural policy. Not only in Europe, but also in e.g. America and Australia, policy programs were constantly trying to balance the apparently conflicting objectives of encouraging modernisation and scale increase of the farming sector and protecting the family farming model (Variyam and Jordan 1991, Lobao and Meyer 2001, Cockfield and Botterill 2006). Through the CAP, Europe became an agricultural welfare state, in which the incomes of millions of farmers and their families would be underwritten by the state over the long term (Rieger 2005).

By the end of the 1970s, the European agricultural policy was so successful that it resulted in agricultural overproduction. It was expected that the system of price subsidies and border protection, covered by the CAP, should be self-financing because the costs of price support would be offset by the expenditure raised from levies on agricultural imports. But the technological revolution in farming during the 1960s and 1970s enabled the more efficient farmers to respond to these high price guarantees by increasing output (Potter and Tilzey 2007).

At the end of the 1980s, environmental problems such as manure surplus, disappearance of landscape elements, eutrophication, loss of biodiversity became

apparent (Merz 1997). Market and competition were capable of attributing economic value to commodities, but failed in the remuneration of the value of non-commodities to farmers (Hagedorn 2003). The concept of sustainability gained the attention of policy makers. The Brundtland-definition stated sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987). Around the same time, the European Commission publishes the paper 'the Future of Rural Society' (CEC 1988) to clarify the rationale for state assistance to marginal farmers by linking their vulnerability to market processes with the need to underwrite their role as stewards of the countryside. The combination of these two concepts is implemented by the European Commission (2004) in one of the recent objectives of the Common Agricultural Policy as follows: 'to have a sustainable, efficient farming sector which uses safe, clean, environmentally-friendly production methods providing quality products to meet consumers' demand'. Policy measures related to non-commodities were developed. As an example, the manure action plan in Flanders was developed (1996), but family farms with animals ('Gezinsveeteeltbedrijf') got advantages related to e.g. permissions and transfers on the manure market (Gabriëls and Van Gijseghem 2003).

Policy makers gradually started to recognise that agriculture is producing not only commodity outputs such as cereals, beef, etc. which can be sold in the market, but also non-commodity outputs such as biodiversity, landscape, safeguarding of the rural environment, food security and rural viability. The 'European Model of Agriculture' promotes the idea that farming, and especially family farming, is essential for the kinds of landscape and rural social life valued by society as a whole. Therefore, policy makers supported public goods and social equity justifications for shielding farmers from world market forces and offering them income support (Potter and Tilzey 2007). For example, the MacSharry reform of 1992 agreed on lower institutional prices, but at the same time, farmers were compensated with progressively increasing direct payments (Gasson and Errington 1993, Potter and Tilzey 2007). Farmers deserve this state assistance not only because their incomes tend to be lower and more volatile than those of other groups in society, but also because, without farmers, the communities and environmental endowments of the countryside would not longer be sustainable or meaningful in wider social terms (Potter and Tilzey 2007).

To emphasise this 'jointness of production', a 'second pillar' based around the rural development regulation 1257/99 was added to the 'first pillar' that was oriented towards market support (Matthews and Monnet 2002). The focus on non-commodity support implies that farmers are regarded important in the realisation of these measures. This is emphasised within the Mid Term Review by stating that market revenues alone are not enough to ensure an acceptable standard of living for many farm households, and that direct payments continue to play a central role in ensuring a fair standard of living and stability of income for the agricultural

community (Matthews and Monnet 2002). So in all these policies the EU clearly accepts the specific value of family farming systems.

2.5. Conclusions

The family farm is the cornerstone of the European agricultural system. Family farming is an occupation in which capital, land and labour are used to produce agricultural output. But it is more than only an occupation: it is a lifestyle based on beliefs about living and working on the farm. However the question is why the family farm remains so important in Western European agriculture, compared to other kinds of production systems.

Both the socio-economic and historical rationale are based on the importance of an efficient farming system that ensures the food availability within countries. The socio-economic rationale is based on a micro economic point of view, while the historical rationale is formed within a macro economic point of view. Therefore the two rationales enhance each other and interact to some extent.

At the micro level, the success of the family farm is based on the human capital of the farming family, low transaction costs for monitoring labour results, the need for labour flexibility, the willingness of family members to work more than eight hours a day and the ability to withstand hard (financial) times. These socio-economic characteristics explain why family farms are still surviving in a capitalist society: agricultural production cannot be fully industrialised. Committed people are the optimal link between nature and the farm produce, and this is reached to the highest extent on family farms as family members are mostly fully engaged in their farm.

Within the history of Western Europe, the availability of food for the population has been one of the major concerns of policy makers. Food is provided by the farming sector and different protectionist measures have been developed in order to secure enough food over time. Although these measures do not focus on a specific kind of farming system, the farm lobby has influenced the legislations in order to safeguard the current farming systems, who were, due to history, mainly family farms. From 1980 on, the governmental focus on food production has broadened to a sustainable production in which both commodities and non-commodities are important. Within the historical rationale, the family farm has shifted from an implicit to an explicit tool to develop the political goals.

The persistence of the family farm is based on both the socio-economic and the historical rationale, but especially the interaction between farm and family enables the family farm to remain viable. However, the family farm has also changed as production system over time. The change in the family farm structure over the last decades indicates that the family farm has become a capital intensive form of agricultural production in which the PDM and his family make the capital available

for production. Taken this history into account, the continuation of the family farm will depend on the availability of a successor, and his ability to cope with this changing situation and the increasing capital need.

Chapter 3 – Conceptualising intergenerational farm transfer

3.1. Introduction

The family farm as discussed in Chapter 2, is continued over different generations. Therefore we will first clarify the process of intergenerational farm transfer. Further, the main objective of this chapter is to develop the conceptual framework and hypotheses (Section 3.3). Section 3.4 describes the data and the strengths and weaknesses of the research design are discussed. The detailed methodologies for each explaining factor will then be elaborated in the subsequent chapters 4 to 7.

3.2. The process of intergenerational farm transfer

3.2.1. The farm life cycle

Family farms tend to have a cyclic history in which the early, middle and late stage are determined by certain family life cycle events (e.g. the farmer's marriage, birth of children, their later dispersal, retirement), i.e. the farm family life cycle, and the evolutions of the farm business, i.e. the farm business life cycle (Potter and Lobley 1996b) (Figure 3.1). The individual farm business life cycle starts when the farm passes from one manager to the next, often with an intergenerational transfer (Boehlje and Eidman 1984, Gasson and Errington 1993, Bessière 2004). In the first stage of the farm business life cycle, farm succession is likely to be a gradual process: the designated successor first shares farm work, then takes part in farm management, and eventually becomes the sole owner (Blanc and Perrier-Cornet 1993, Gasson and Errington 1993). The consolidation stage is based on production. The reimbursement of the debts is also of major importance in this stage. After the consolidation stage, the exit stage of the business begins when the farmer starts to experience the effect of ageing. Keating and Munro (1989) state that in the exit stage, the farmer reduces his management responsibilities and plans for transfer of ownership of the farm property. But according to Potter and Lobley (1992), the choices available in retirement and old age are determined much earlier in the life cycle as PDMs make provision for successors and/or take precautions against relative low retirement pensions.

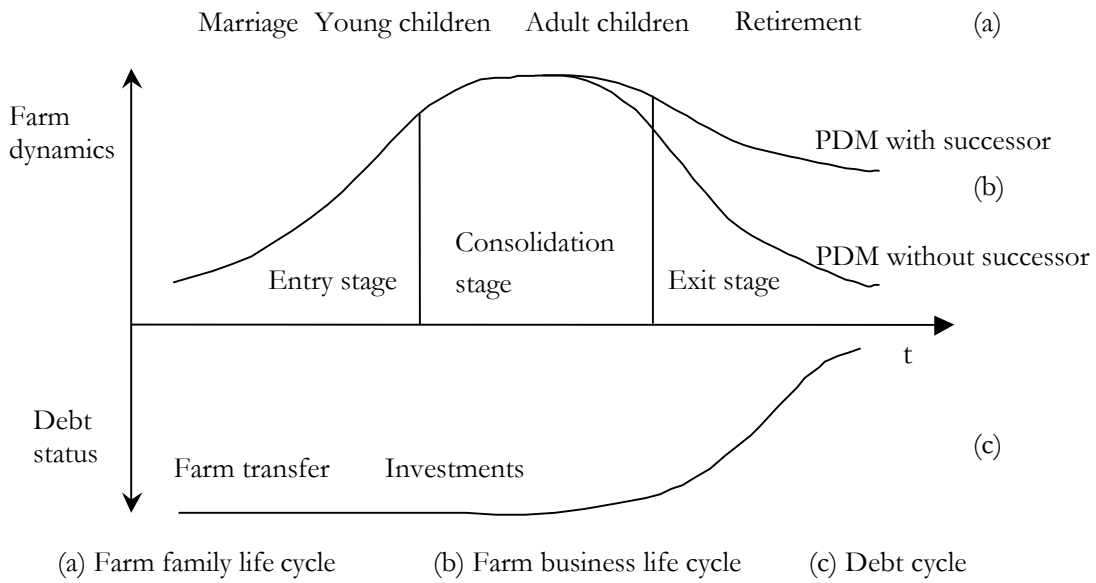


Figure 3.1 Farm business life cycle of outgoing PDM

Source: own compilation based on Keating and Munro 1989, Gasson and Errington 1993, Potter and Lobley 1996a

Each stage of the cycle tends to place different pressure on the business, creating periods of labour excess and undersupply, and this, together with the changes in the farmer's own ambitions and aspirations, leads to periods of expansion, consolidation and finally reduction of expenditures (Evans 1987, Potter and Lobley 1996b). The labour productivity will tend to vary with each successive stage in the farm life cycle, not only because of variation in labour supply, but also because of investment decisions related to the development of the business itself. The significant points in the farm family life cycle (marriage, children, death) may be marked by substantial changes in farm size, location or farming practice. If none of these solutions is pursued, the fluctuating labour supply will lead to considerable variation in labour productivity, with family members being overstretched over certain periods of the family life cycle and underemployed at others (Errington and Gasson 1994).

Due to the interaction between the farm family life cycle and the farm business life cycle, the synchronising of the cycles is crucial for the continuance of the farm family business and the intergenerational succession (Gasson and Errington 1993). The timing of the farm transfer is expected to affect farm survival (Väre 2006). As this timing determines the value of the assets transferred, it has a major effect on the future profitability of the farm, and on the welfare of the farm household (Kimhi 1994). A good balance between time, labour and management will be important for both the parents and the successor because on the one hand, many older PDMs are

full owners of their business, but are working less than younger designated successors. On the other hand, the younger generation may have taken over much of the labour early in their careers, but management and ownership is not transferred until late in mid-life (Perry *et al.* 1995).

3.2.2. Farm transfer

The transfer from one generation to the next is recognised as one of the most problematic phases in any business operation, especially in those that are family owned (Russell *et al.* 1985, Keating and Munro 1989). The decision of farm transfer by the PDM is based on its own decision and strategy, but also on those of the child(ren). If no good communication between PDM and child(ren) exists, there will be a so-called Nash-equilibrium, i.e. a sub optimal equilibrium in which the PDM cannot improve the farm situation because of unclear information on the current strategies of the (potential) successor, and vice versa. Both PDM and successor take the best decision based on the available information and the decision of the other, although this does not include that this is the best cumulative payoff for all partners involved in the farm transfer. Good communication can break the Nash equilibrium in order to follow the best strategy for both PDM and successor.

Another factor is that interpersonal friction may arise when the younger generation starts to be involved in the farm business and the older generation is phased out. There are two potential conflicting interests within this relation: the PDM tries to achieve security and comfort in his old age, with his feeling of responsibility for the whole family; and the potential successor has ambition for control, for making decisions and for wanting to run the business his way (Weston 1977, Rosenzweig and Wolpin 1985). The major cause of dissatisfaction among successors is their exclusion from management decisions, because they can only climb the succession ladder very slowly (Weston 1977, Weigel and Weigel 1987). In a more extended family context, also frictions may arise between brothers, sisters and other involved family members (e.g. partner).

The intergenerational transfer of the farm family business involves three distinct but related processes: succession, inheritance and retirement (Weston 1977, Thomas 1980, Gasson and Errington 1993). Succession refers to the transfer of managerial control over the use of the business assets (including land and quota); inheritance denotes the legal transfer of ownership of these assets; while retirement marks the withdrawal of the present manager from active managerial control and/or involvement in manual work on the farm.

3.2.2.1. Farm succession

The succession of the farm cannot be seen as a clearly defined package of land, buildings, plants, animals and stock that passes from one generation to the next, but as a process where the traditions, skills and capital of farming are passed on (McCrostie Little and Taylor 1998). The succession process takes a number of years during which a gradual transfer of managerial control to the successor is established. In this process, the younger generation will strive for self respect, autonomy, and a greater share of responsibility, while the older generation is striving to maintain control of decision making and respect for past accomplishments (Weston 1977, Rosenblatt and Anderson 1981).

Succession starts with the decision to have a successor and is influenced on the one hand by the parent-owners of the farm who have the sole right of designating a succeeding child, and on the other hand by the child that has to agree to be designated as a successor (Kimhi and Nachlieli 2001). The research of McCrostie Little and Taylor (1998) indicates that the first condition for successful succession is that families pass the process with open communication among all family members. According to Taylor and Norris (2000), the key factor for a smooth succession is a similar perception of fairness among family members. A second condition to ensure a smooth succession is an early start of succession management (McCrostie Little and Taylor 1998). The succession of the farm will depend on both the personality of PDM and successor. Taylor *et al.* (1998) found that participants could be broken into two broad types – those who took a conservative, safe approach to business (conservators), and those who embraced change, innovation and expansion (expanders). The dynamics of succession will be different depending on the combination of expander and conservator behaviour in the two generations (Table 3.1). If both PDM and successor are expander, the continuity of the family farm is put central, but the shared need for control hinders a good partnership. The struggle for power can hinder a fluent transfer of the family farm. In case of a PDM as expander and a successor as conservator, the PDM has a high need for control, but the successor does not make problems on this, even if he does not agree. However at the moment of farm succession, this can give problems as the PDM has difficulties to pass control to the successor, although the PDM will decide when and how succession will occur. If the PDM is rather conservative, and the successor is an expander, the farm transfer will be driven by the ambition of the successor and the PDM will recognise and support the abilities of the successor. In case that both PDM and successor are conservators, a consensual decision-making exists and hardly any power struggle occurs. The decision to transfer the family farm is a gradual decision that grows over the years and is based on consensus (Taylor *et al.* 1998).

Parents have the ability to wait and to make the decision when to transfer the farm to a succeeding child after a certain period of time, rather than making a prompt decision. This option gives the parents an opportunity to enrich their information set

and compare more accurately the expected utility and disutility of transferring or not transferring the farm during some specified time interval (Miljkovic 2000).

Table 3.1 Farm succession patterns

		PDM	
		Expander	Conservator
Successor	Expander	• Farm continuity is valued • High energy, drive, vision and need for control • Power struggle needs to be resolved in order to work together	• Expansion and diversification are driven by the ambition of successor • Succession unfolds in a relatively harmonious matter
	Conservator	• No power struggle • Only senior farmer has need for control	• Family goals ahead of individual goals • Succession unfolds in a relatively harmonious matter

Source: Taylor et al. 1998

3.2.2.2. Farm inheritance

The legal transfer of ownership of the business assets (including land and quota) is different all over Europe, although three patterns related to farm inheritance can be distinguished: (1) equal shares and break-up of the holding (Mediterranean areas); (2) equal shares and preservation of the unity of the holding (France, Denmark and Belgium); (3) unequal shares and preservation of the unity of the holding (UK, Ireland, the Netherlands, Germany). These differences result from three main issues: (1) whether or not the farm is kept as one single unit, (2) whether or not the inheritance involves equal shares, and (3) the relationship between generations (authoritarian – independent) (Blanc and Perrier-Cornet 1993). Related to these patterns, the proportion of agricultural land farmed by owners in the European Community, is given in Table 2.2. In France and Belgium, the proportion of land owned by the PDMs is low in comparison with other European countries.

In the Belgian system of 'equal shares and preservation of the unity of the holding', the unity of the farm is preserved and the division among heirs is equal, although there are arrangements to ease the successor's business start. In Belgium, the

transaction is made between the parents and the successor, but the latter does not have the burden of buying the land because renting is common practice (Table 2.2) and the right to lease land does not have to be negotiated on the open market. In order to ensure equal shares – despite some infringements – for the heirs while preserving the farm as a unit, the successor will buy all or part of the holding passed on by the family. This is one of the reasons why young PDMs are far deeper in debt than longer established PDMs in Belgium (Blanc and Perrier-Cornet 1993).

3.2.2.3. Farm retirement

The retirement of the PDM, which can be seen as the withdrawal of the present PDM from active managerial control and/or involvement in manual work on the farm, is the third factor within the farm transfer. The timing of the retirement is influenced by the government regulations related to retirement and the available pension schemes (Väre 2006). Even if the managerial control is handed over (succession) and the arrangements related to the inheritance are made, the older farmer can still be involved in the manual work on the farm. Considerations that may affect the retirement decision of the farmer can be the availability of a suitable successor among the children, the personal need or preference for retirement, the optimal time of farm transfer from the successor's point of view and health and physical fitness considerations (Kimhi and Lopez 1999, Pesquin *et al.* 1999).

3.3. Conceptual framework and hypotheses

3.3.1. Shortcomings in the literature

In literature related to farm transfer, three main aspects are mentioned: the (1) social, (2) economic, and (3) legal aspects. Within this section, we give a short overview of the literature related to each aspects and indicate the shortcomings of these researches.

The literature related to the social aspects of farm transfer is mostly descriptive. Some scientific papers focus on the behaviour of family members (Russell *et al.* 1985, Herrmann and Uttitz 1990, Gray 1998), fairness and conflict (Taylor and Norris 2000), the gender issue (Brandth 2002), or the farm transfer process itself (Weston 1977, Fennell 1981, Keating and Munro 1989, Potter and Lobley 1992, Errington 2002). Other researchers such as Ballard-Reisch and Weigel (1991) model the interaction between the generations of the farm family, or focus on the interaction between succession, retirement and inheritance (Kennedy 1991, Kimhi and Lopez 1999). The relation between intention and behaviour at the end of the process of farm succession is modelled by Väre *et al.* (2005). A shortcoming of these researches is that, as far as we can see, no research focuses on the whole long-term process in

which a potential successor forms his intention to farm succession and over time progresses towards the decision to continue the family farm.

Related to the economic aspects, a lot of studies investigate farm characteristics explaining farm transfer and farm exit (Kimhi and Bollman 1999, Weiss 1999, Glauben *et al.* 2002, Hennessy 2002, Pietola *et al.* 2003, Mishra *et al.* 2004, Diwisch *et al.* 2005, 2006, Aldanondo Ochoz *et al.* 2007). The likelihood of intergenerational succession of family farms is studied (Kimhi and Nachlieli 2001). The optimal timing of farm transfer is modelled and discussed (Kimhi 1994, Miljkovic 2000, Väre 2005, 2006). All these researches take into account a number of explanatory variables to model the farm succession or the timing of farm succession. A large number of variables is identified to have an effect on the final farm transfer. The shortcomings of these researches are that the explanatory variables have a static character. They do not reflect a dynamic process and the use of such a high number of variables hinders a straightforward interpretation of the models.

The legal aspects receives relatively low attention in scientific literature. Moreover, available studies are often country specific (Schmitt and Hoffmann 2001). A study by Van der Veen *et al.* (2002) gives an overview of the financial and fiscal facilities in six European countries. The papers of Van der Veen *et al.* (2004) and Van Bommel *et al.* (2007) emphasise the Dutch problems in farm take-over related to agricultural firms such as partnerships, but for the Belgian situation we lack scientific research related to the legal farm status.

The lack of dynamic dimension reflected in the shortcomings within these three aspects, in combination with the literature review in Chapter 2 and Chapter 3, forms the basis for the conceptual framework within this research.

3.3.2. A farm succession cycle model

The literature review of section 3.2 justifies the inclusion of the farm life cycle in which stages of growth, consolidation and transfer take place in our model. Section 3.3.1 gives a short overview of the literature that refers to the social, economic and legal aspects that determine farm succession, but lack the dynamic dimension of them.

For our research purpose, we link the farm succession cycle to the farm life cycle to stress the importance of farm transfer during the whole farm life cycle. The farm succession cycle model forms the conceptual framework of this research (Figure 3.2). Within this conceptual framework, farm succession is regarded as a process and therefore, transfer aspects are not only important at the moment of farm succession, but need to be taken into account over a longer period. The main hypothesis of this research is then stated as follows:

The transfer of a family farm is a long-term process, based on social, economic and legal drivers. Successful farm transfer is then the result of three interlinked processes: (1) a motivating social context, (2) a farm management focussing on the farm future, and (3) a legal context that facilitates the transfer of the farm. Insights in these processes support decision making at both farm and policy level.

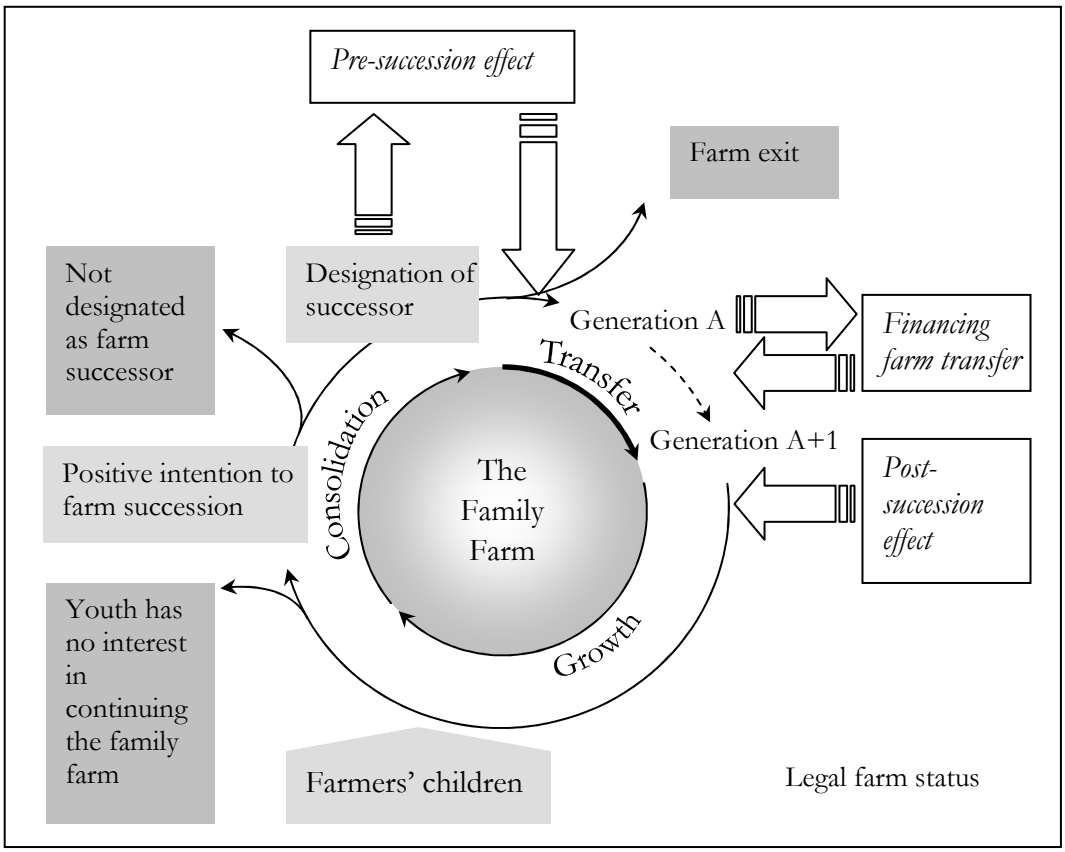


Figure 3.2 Conceptual framework: the farm succession cycle model

Source: own compilation

Before focussing on the different aspects, it is important to notice that at each stage of the farm succession cycle, the decision to not continue the family farm can be taken, and one can exit the farm succession cycle. Only if the social, economic and legal aspects do not hinder farm transfer, the family farm is passed to the next generation.

3.3.2.1. Social aspects

Social aspects have a major impact on the behaviour of farmers' children, but the available literature focuses on the behaviour close to farm transfer, although the behaviour is formed over a longer time period. Inspired by the theory of planned

behaviour (Ajzen 1985, 1988, 1991), a succession intention model is developed that makes it possible to analyse the process of intention to farm succession and reveals the factors that influence the decision to take over the farm. Starting from their motivation, farmers' children can have a positive or negative intention to farm succession, which can be translated into being designated as farm successor or not.

The sub hypotheses related to this part are formulated as follows:

1. *Beliefs related to farming and farm transfer have an influence on the intention and behaviour of farmers' children with respect to farm succession*
2. *Farmer's children take personal considerations, farm environment, social environment and external influences into account in the decision to continue the family farm*

These sub hypotheses are tested in Chapter 4.

3.3.2.2. Economic aspects

The economic aspects included in the farm succession cycle model contain different elements: (1) the pre-succession effect, (2) financing farm transfer, (3) post-succession effect.

The designation or non-designation of a successor might have an influence on the farm management before farm transfer (pre-succession effect), and determines the further development of the family farm.

The linked sub hypotheses are the following:

3. *There is a positive relationship between a farmer's early awareness of whether a successor is available and the management of the farm*
4. *The discrepancy between the intended succession and the actual succession is smaller on farms with a higher TFA*
5. *When a potential successor has been identified, current management will be oriented towards optimising the viability of the farm. When, instead, an exit from farming is envisaged, PDMs start to disinvest*

These sub hypotheses are tested in section 5.3 and part of section 5.5.

At the moment of farm transfer, the financing of farm transfer is a crucial aspect, which has an effect on the rest of the farm life cycle. Different sources of financing are used to cover the take-over price of the farm. The modelling of the absolute and relative external financing leap is a tool to estimate the importance of different influencing factors.

This is tested in Chapter 6 with the following sub hypotheses:

6. *High total farm assets are positive correlated with a high absolute external financing leap*

7. *High total farm assets are positive correlated with a high relative external financing leap*
8. *The way of financing the family farm determines farm management of the next farm life cycle*

Finally, the designation of a successor before farm transfer can still have an influence on the farm management at the start of a new farm life cycle, referred to as the post-succession effect. Therefore, the last sub hypothesis within this section is:

9. *The timely designation of a farm successor has a positive effect on the TFA development after the start of the new farm life cycle*

This sub hypothesis is tested in section 5.5.

3.3.2.3. Legal aspects

The legal farm environment is not only of major importance at the moment of farm transfer, but a suitable kind of legal configuration is favourable during the whole farm cycle and has consequences for different aspects of the family farm. It is also related with the financial and fiscal environment of the family farm.

In order to test the importance of the legal farm environment within the family farm and the farm succession, different sub hypothesis are stated:

10. *A limited knowledge of legal configurations is a major obstacle in a positive attitude towards other legal constructions*
11. *PDMs perceive the natural person configuration as being better than the business entities with separate legal personality*
12. *Business entities with separate legal personality are reserved for a limited group of farms that have a well-considered idea of the future*

These sub hypotheses are tested in Chapter 7.

3.4. Data

In order to test these hypotheses, primary and secondary data are collected and processed.

3.4.1. Data collection

Information for which researchers design a survey instrument, collect information and enter these data into a database are considered as primary data. Primary data are in general expensive, both in time and money. However, these data are often crucial in order to verify the research hypotheses. There are several techniques to generate

primary data, e.g. questionnaires and focus groups. Questionnaires can be sent by mail or post, carried out through telephone or held personally (Malhotra 1999). Taken into account the fact that primary data are in general expensive in time and money, different ways of primary data collection are used within this research. Two different kinds of questionnaires are used. The description of the data collection and questionnaires is given in the related chapters (Chapter 4 and Chapter 7).

Secondary data are data that have already been collected for other purposes. They are in most cases easy accessible, relatively inexpensive and quickly obtained. In some cases, secondary data can answer research questions and test hypotheses (Malhotra 1999). The secondary panel data are extracted from the Belgian Farm Accountancy Data Network (FADN) database that contains yearly accounting data of farmers all over Belgium. Only the data of Flemish farms are used. The use of secondary data is discussed in Chapter 5.

In-depth interviews are used to demonstrate the link between research outcome and farm practice. In March 2008, 8 in-depth interviews are done. The respondents have the objective to take over the family farm, or have already taken over the family farm. They differ in education, legal farm status, kind of farm transfer, farm type, etc. The results of these interviews are used to clarify the theoretical concepts and outcomes of the analyses with examples from the field. The in-depth interviews cannot be generalised, but have to be seen as real-life cases and this will be used as illustrations in boxes.

3.4.2. Data processing

Once the questionnaires were completed, the next task was to code the responses. After the datasets had been entered in the statistical program of SPSS for Windows, some new variables were created in order to carry out the analyses requested to verify the conceptual framework and hypotheses of the research. Frequency tables were developed to control for outliners and the data were checked for consistency and missing responses (Malhotra 1999). On both datasets, several statistical methods were applied to analyse the data including paired t-tests, One-way ANOVA, chi-square tests, factor analysis, cluster analysis etc.

As the FADN database consists of an unbalanced panel, the statistical program Limdep (Econometric Software Inc. 2002) was used to analyse the pre- and post-succession effect and the external financing leap. The statistical method of ordinary least square regression is used to analyse the data (Greene 2002).

3.4.3. Strengths and weaknesses of the research design

One of the strengths of this research is that it does not focus on one specific aspect of farm transfer: the study of the different factors explaining intergenerational farm transfer encourages a more holistic view on the topic. Through the use of different questionnaires and secondary data, multiple aspects of the research topic can be analysed. In the discussion chapter (Chapter 8), links between the different influencing factors are established.

The research makes use of three different databases. The cases in each database are however not connected to each other and there might be expected an overlap in only a limited amount of cases. This is a limitation as no respondent specific analyses are done taking into account the different influencing factors. But it can also be seen as strength: the total number of farms involved in the research might be up to 5 per cent of the Flemish farm population.

The secondary data for the analyses related to the economic context, make that a high number of data, over a 15-year time period is available. The representation of the different farm types is in accordance with the distribution within the Flemish agriculture. A limitation of secondary data is that the needed variable is not always available and the researcher has to work with the available dataset. Moreover, the population of this dataset is not constant: each year some new farmers enter the dataset, and others disappear. This hinders the appropriate application of some analysing techniques (e.g. lack of balanced panels).

Story of a farm transfer

Farmer Peter (28):

"It was already clear for some time that I would take over the family farm, although it was not a predestination. My wife and I considered the transfer of the family farm, but also taking over other farms.

In the past, I went to see a couple of other farms. In 2000, I looked at some dairy farms, because it was not allowed to expand the pig production (stand still). Within dairy production, it was possible to take over a dairy farm and to remain producing on that farm during 9 years, and afterwards, the milk quota could be included on our farm. But I didn't do it because I didn't find a good dairy farm: not too far, with enough quota and farm buildings that could last for another 9 years.

At that moment, a company asked me to work for them, and over there, I met my wife. On January 9th, 2006, we started to develop a farm vision in order to prepare a good farm transfer. We had a talk with a farm adviser to see how we could set about it, because different aspects of the farm had to be handled. On the one hand, the cow house was dated, and needed replacement. On the other hand we wanted to expand the pig production. Moreover we wanted to convert to a BVBA (Private Company with Limited Liability). The first idea was to replace the cow house and within 4 to 5 years to start with the sty to increase pig production, but the feasibility study made clear that it was possible to do both projects at the same time. In this way, the price of the investments was lower and all permissions could be arranged at the same time. So the feasibility study gave insight in the cash flow of the actual production, compared it with the farm accounting and the averages of similar farms. An investment plan was made taking into account the increase of milk quota, increase in nutrients, and the building of the cow house and the sty. The estimate of the cost price, new calculations of the cash flow and the possible loans showed that the investments were feasible. The bank didn't make a problem of the high loans related to the farm transfer, because the feasibility study showed that it was feasible.

For the determination of the farm transfer price, the advisor made estimation of the valuation of the farm, but I also informed in other places to know the standard amount of e.g. a pig place. The valuation of the cow house was €0, because we had to demolish it anyway, but for the sties, a valuation was done. Finally, the sties were not transferred and they are still property of my father. He rents them to the BVBA. I also made an inventory of the agricultural machinery and tools, indicating the purchase price and purchase year, and asked somebody to make an estimation of the actual value."

Chapter 4 – A succession intention model

4.1. Introduction

Farm succession is an important issue in agriculture. Although agricultural commodity markets and prices tend to increase due to increased demand for food and bio-resources, the number of farms in most countries still drops significantly (Chapter 2). Even prosperous farms often do not find a successor within the own family. From political point of view, both the European Union Development Policy 2007-2013 as many national policies try to increase the succession rates in farming (Departement Landbouw en Visserij 2006, European Communities 2006). An important goal of the EU Rural Development policy is to increase the competitiveness of the agricultural sector of which a number of measures focus on young farmers. The measures aim at an increase of the human capital by means of vocational training, information actions and support of young farmers. Also national policies try to take measures. At the Flemish level in Belgium, e.g., the Minister of Agriculture has made efforts to develop a Farm Youth Action Plan (Leterme 2006) that has as main objectives to (1) stimulate the openness for farming among farm youth by education and training; (2) guarantee a professional start in case of succession by supporting young farmers during farm transfer, by stimulating the foundation of separate legal business entities and by improving the system of investment subsidies; (3) stimulate innovation and multifunctionality among young farmers; and (4) better inform young farmers about changes in European and Flemish agricultural policies and the potentials this creates. However, in reality still a gap between policy and practice exists.

Starting from the farm succession cycle model, we focus on the social aspects within this chapter (Figure 4.1), as a better understanding of the farm succession intention process can remove existing obstacles for farm successors in farm transfer. Therefore, we analyse the factors that determine the intention and behaviour of potential successors within a Succession Intention Model (SIM), which is inspired by the theory of planned behaviour (Ajzen 1985, 1988, 1991). Potential successors are also clustered in a way to make it possible to focus on the specific needs related to farm transfer, as not all potential successors recognise the same farm transfer problems. Based on the revealed obstacles within farm succession, policy recommendations are formulated in order to increase the possibility of farm succession on viable and competitive family farms.

Within this chapter, we look at the succession problem from the perspective of the successor. The focus on farmers' children does not intend to minimize the role of parents and other stakeholders in the process of farm succession, but we want to

highlight the critical factors in the succession process from the point of view of farmers' children.

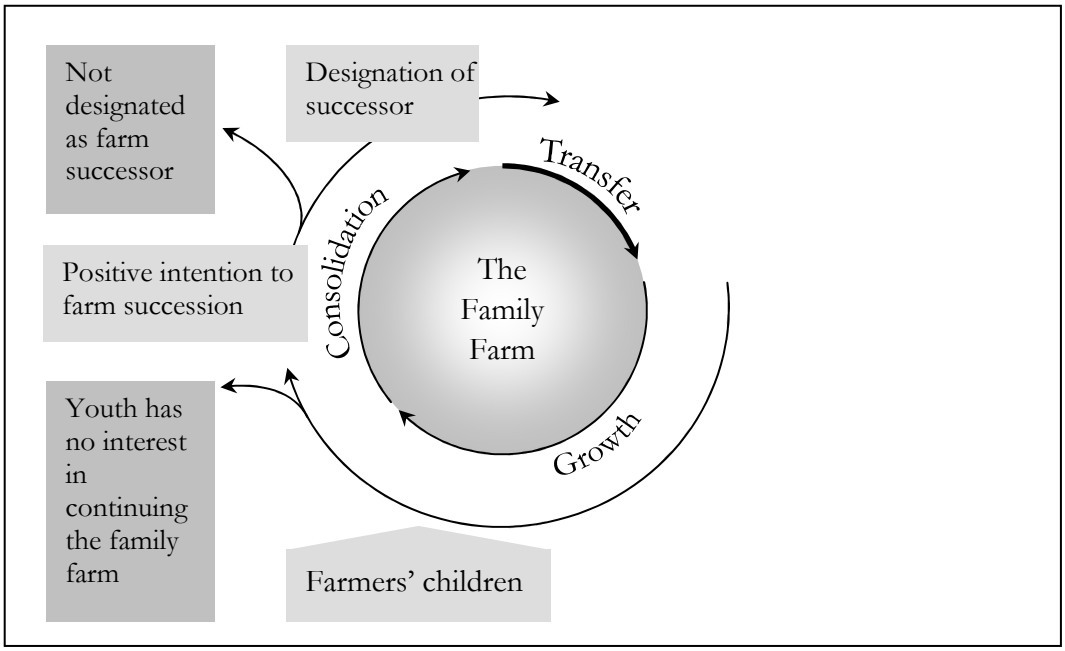


Figure 4.1 Social aspects within the farm succession cycle model

Source: own compilation

4.2. The theory of planned behaviour

The theory of planned behaviour (Ajzen 1985, 1988, 1991) explains the evolution process that leads to a given particular behaviour. A single behaviour can be viewed as involving an action directed at a target, performed in a given context, at a certain point in time (Fishbein and Ajzen 1975). In this research for example, the behaviour can be the action of farm succession that is directed towards the shift of responsibilities of the farm from the present PDM to the successor, within the prevailing social, economic and legal context, and during the period that the present owner gives the reins to the successor, but it can also be the exit from the farm succession cycle.

The theory of planned behaviour is an extension of the original theory of reasoned action (Fishbein and Ajzen 1975) that assumes that human beings usually behave in a sensible manner, and that when taking action, they take into account all available information and implicitly or explicitly consider the future implications of their actions. However, many factors can obstruct the intention-behaviour relations among which the bounded information problem. The theory of planned behaviour (Ajzen 1985, 1988, 1991, Ajzen and Fishbein 2005) adds this aspect to the theory of

reasoned action as degree of control (perceived behavioural control: PBC, actual behavioural control: ABC). Figure 4.2 gives an overview of all influencing factors that eventually lead to behaviour.

The foundations of behaviour are the individual, social and information factors that determine the background of a person, as well as values and prejudices (Ajzen and Fishbein 2005). Once a personal set of beliefs is formed (dotted rectangle in Figure 4.2), it provides the cognitive foundation from where attitudes (A_t), perceived subjective norms (SN_t), and PBC are assumed to follow in a reasonable and consistent manner (Fielding *et al.* 2005).

The attitude towards behaviour (A_t) refers to the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question. The subjective norm (SN_t) covers the perceived social pressure to perform or to not perform the behaviour. The third antecedent of intention – PBC – refers to the perceived ease or difficulty of performing the behaviour of interest and is assumed to reflect past experience as well as anticipated impediments and obstacles (Ajzen 1991). The PBC forms the main difference between the theory of reasoned action and the theory of planned behaviour.

These motivational factors that influence behaviour are captured by intentions (I_t) (Ajzen 1991, Beedell and Rehman 1999, 2000). Barring unforeseen events, people are expected to act in accordance with their intentions. Clearly, intentions can change over time and the accuracy of prediction will usually be an inverse function of the time interval between the measurement of intention and the observation of behaviour (Ajzen 1985). The outcome of an intention is a person's attempt to perform behaviour (B_t). Behaviour (B) can best be interpreted as the result of the above-defined attempt to perform certain behaviour (B_t) and the actual behavioural control (ABC). ABC allows the inclusion of non-volitional, or in other words external, factors as determinants of behaviour. It refers to the availability of required prerequisites in terms of capital, knowledge, skills and opportunities.

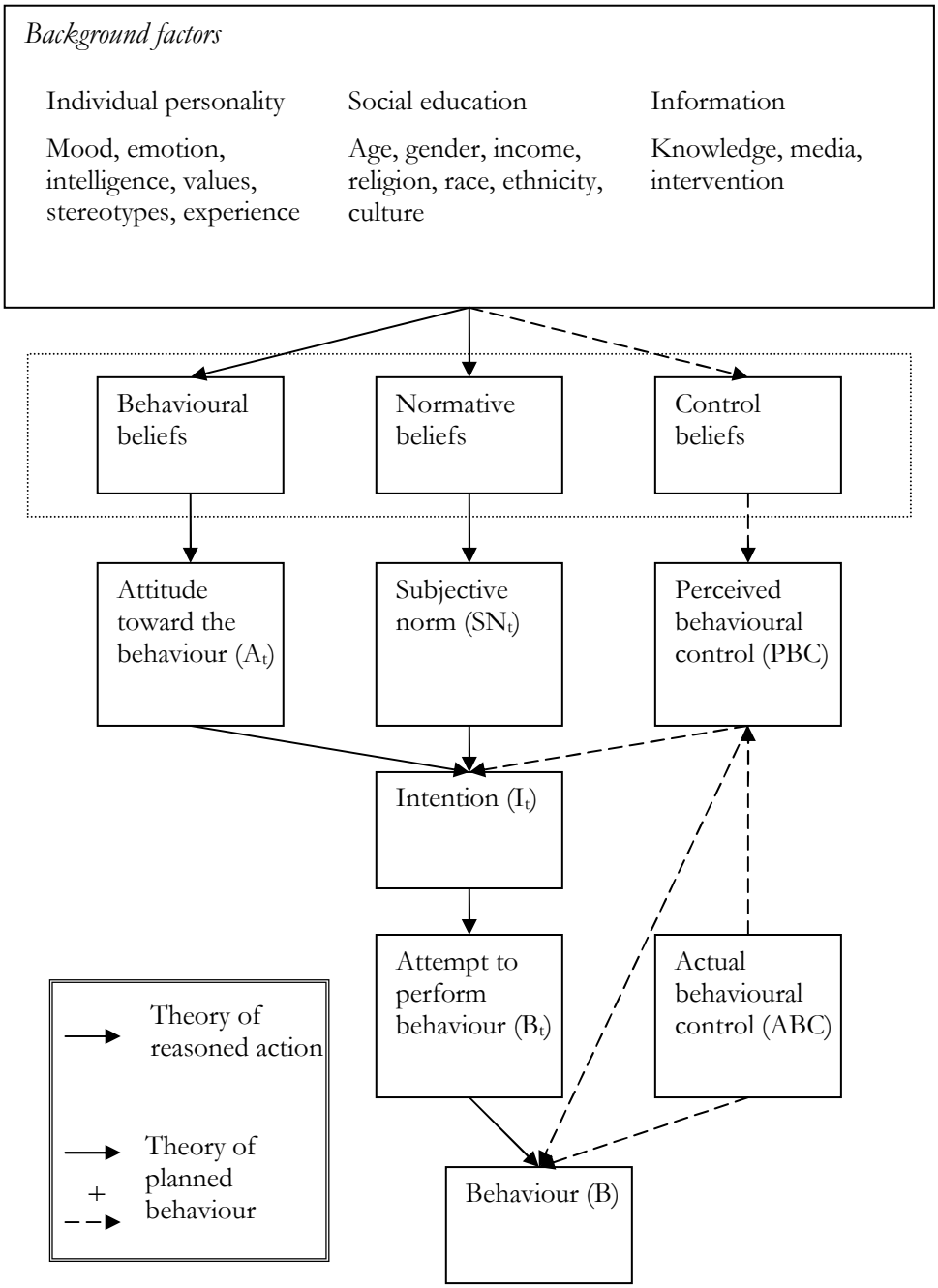


Figure 4.2 The theory of reasoned action and planned behaviour

Source: Ajzen and Fishbein 2005

4.3. Methodology

4.3.1. Introduction

Inspired by the theory of planned behaviour (Ajzen 1985, 1988, 1991), a potential framework to analyse the intention and behaviour related to farm succession is developed. The starting point of the theory of planned behaviour is that a major part of the people's behaviour is considered to be under volitional control: people can easily perform the planned behaviour if they are inclined to do so (e.g. lose weight, give a gift, search for a job). In the theory of planned behaviour, a person can decide either to execute an action, or to reject this action. However, within the process of farm succession, not only the volitional control is important. Besides the own personal considerations also the farm environment, the social environment (e.g. partner), as well as external influences play an important role. For this reason, the original concepts of the theory of planned behaviour are used as building blocks for a Succession Intention Model (SIM) which is further enlarged to include farm environment and external influences.

Within this methodology, we first focus on the hypotheses and the data. In section 4.3.4 the SIM is developed.

4.3.2. Hypotheses

The hypotheses related to the social aspects can be formulated as follows:

1. *Beliefs related to farming and farm transfer have an influence on the intention and behaviour of farmers' children with respect to farm succession*
2. *Farmer's children take personal considerations, farm environment, social environment and external influences into account in the decision to continue the family farm*

4.3.3. Data

As the starting point of this research are farmer's children, our survey focuses on the intention and perception of farmer's children related to farming and farm succession.

4.3.3.1. Data collection

The dataset used to test this model is the result of an Internet survey amongst children living on a farm. The target group of respondents consists of young people whose parents are living on a farm. The sample is restricted to Flemish respondents aged between 16 and 40. In order to get in touch with respondents, an Internet survey was conducted in the period between the beginning of October 2006 and the end of November 2006 (Figure 4.3). An Internet survey has both strengths and limitations. Contradictory to the statement of Malhotra (1999), an Internet survey is

not expensive: the time devoted to the data collection is reduced as no handling of questionnaires takes place and all data are directly stored in a data file (reducing human errors in data entry and inconsistencies in the dataset); the financial cost is limited as no questionnaires have to be sent by regular mail. A large group of respondents is reached if at the start the e-mail database is well considered. However, a major limitation related to an Internet survey is that not all possible respondents do have Internet access; although Internet and e-mail are now common good for the majority of young people and already 38 per cent of all Flemish farms had a computer and Internet access in spring 2006 (Federal Public Service Economy SMEs Self-employed and Energy 2007).

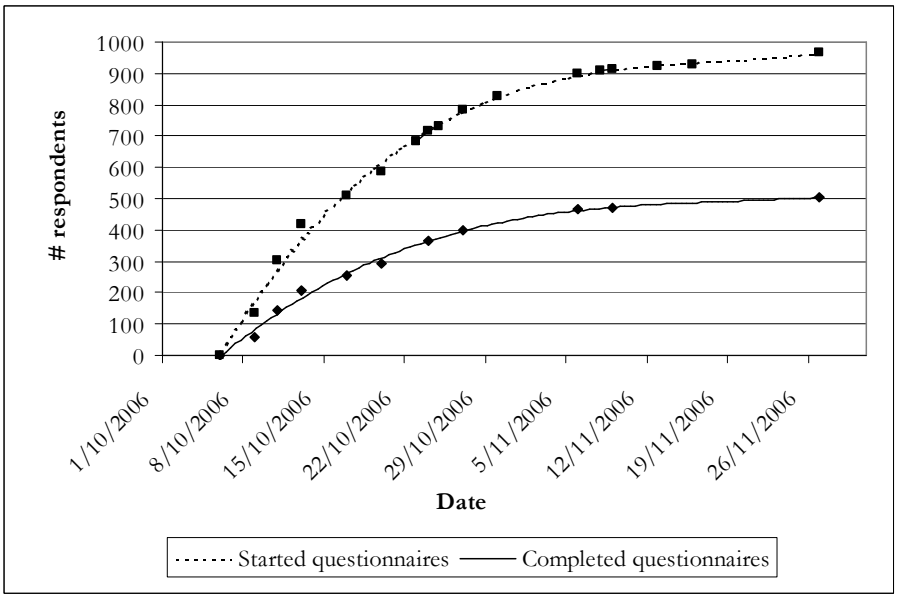


Figure 4.3 Evolution of the number of questionnaires

Source: own compilation

After pre-testing, the Internet survey was conducted as follows: at the start of the survey period, an email was sent to all Flemish schools offering agricultural and horticultural education, to all agricultural (youth) associations, to all appropriate agricultural media (weekly newspapers and websites) and to a lot of stakeholders in the agricultural sector in Flanders. All these potential stakeholders were asked to answer the survey if they belong to the intended respondents' group and/or to forward the email to other possible respondents in their network. In this way a snowball sampling was realised. This non-probability sampling method enabled the surveyors to obtain a reasonable sample of farmers' children all over Flanders. This sampling technique was preferred because it is difficult to have a complete list of farmers' children: data about the total targeted population are not straight forward

available. A disadvantage of snowball sampling is that it relies on referrals from initial subjects to generate additional subjects, entailing that the technique itself reduces the likelihood that the sample will be a representative sample of the population. This bias is limited by starting from an enlarged dataset of initial subjects who are connected through different networks. During the two months period, 987 persons accessed the website, and 504 persons filled out the survey completely.

The analyses conducted are based on respondents of the survey aged between 16 and 40 years and who stated that their parents are farmers[5]. The upper age restriction is based on the age limit of 40 years for access to establishment subsidies for young farmers given by the Flemish government. Taking these limitations into account, the total amount of completed surveys (504) was reduced to 465 surveys. Given the total number of 33,272 farms in Flanders in 2006 (Federal Public Service Economy SMEs Self-employed and Energy 2007), we may state that we have targeted a rather robust sample of the total population[6], even if the sample can not be proved to be completely representative for the whole Flemish potential successor population.

4.3.3.2. Questionnaire

An Internet survey among Flemish farmers' children was used to validate the SIM. The questionnaire consists of six modules (Appendix 1). The use of Internet opens possibilities to involve only the specific target group related to the module: at the start of each module, a selection question is posed to admit only the relevant persons to that part of the questionnaire. Two selection questions were posed at the beginning of the questionnaire to allow only persons under the age of 40, of whom the parents are living on a farm, to answer the questionnaire.

The first module collects general information on the respondent (place of residence, gender, education, siblings, parents). In addition, some information related to the education and work situation of the parents is asked (type of education, agricultural education, profession, function on the farm).

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[5] The fact that the parents are farmers could not be controlled due to the set-up of the survey.

[6] The sample represents 2.5% of the total population of farmers' children in Flanders. This calculation is based on the total number of Flemish farms (33,272), the average number of children per Flemish household (1.53), the average age of the PDM at the moment of farm transfer (59.4), an estimation of the age at which the PDM has first succession perspectives (average age of the first child for Flemish male (32 year) plus a child age of 16 years, makes 48 years) and the average age of the successor at the moment of farm transfer (28.3). The calculation is as follows: 465/((33,272 * 1.53) * (59.4 – 48.0)/(59.4-28.3))= 2.5%
(Federal Public Service Economy SMEs Self-employed and Energy 2007, European Commission 2008)

The second module deals with the farm characteristics. Farm size and farm type are asked to situate the farm within the Flemish agricultural landscape. Within the farm size, a division is made between farmer's owned land and tenant land. Related to the farm type, the number of mother animals is asked in case of animal production on the farm. The question related to the farm labour gives an indication of the pressure of work and the division of work between the workers (father, mother, children and others). The last questions of this module are related to the farm history.

The third module investigates the underlying reasons of the positive or negative intention of farm succession. The questions focus on the opportunities and threats that the respondents experienced with respect to a possible farm transfer.

The fourth module is related to the designation of the successor on the farm, who is not necessary the respondent. In case the successor is not (yet) designated, the main reasons are asked for. In case the successor is designated, questions asked whom is the successor, what his/her place is within the family, if all family members agree with this choice and when the farm will be transferred.

The fifth module has only to be filled out if the respondent is the successor. The questions within this module are related to the labour supply, the changes in farm management and the role of the partner after farm transfer. Two questions focus on the current engagement in the farm management, while the last questions try to investigated the objectives of the future farm management.

The last module consisted of some general questions that have to be filled out by all respondents. On a 7-point Likert scale, respondents indicate the importance of personal objectives.

4.3.4. A succession intention model

4.3.4.1. The farm succession intention stages

In general, the succession process takes a number of years during which a gradual transfer of managerial control to the successor occurs. Succession starts with the decision to have a successor and is influenced on the one hand by the parent-owners of the farm who decide on to whom of the children passing the farm, and on the other hand by the child who has to agree to be appointed as a successor (Kimhi and Nachlieli 2001). In order to reach the moment of farm transfer, different stages have to be completed by the potential successor. Inspired by the theory of planned behaviour (Ajzen 1985, 1988, 1991) and in-depth interviews with (potential) successors, the succession intention stages are developed and consists of three stages in which both interest parties (present PDM and potential successor) have a different role and importance (Figure 4.4):

- Intention stage (IS): The first pre-designation stage of the process consists of the formation of a positive attitude towards intention. It is the stage in which the potential successor starts to consider taking over the farm or not. Therefore the potential successor has in this stage the major role in considering the intended farm succession, while the present PDM has only limited influence on the formation of a positive intention on farm transfer. If no positive intention is formed, the potential successors exits the model.
- Persuasion stage (PS): The second pre-designation stage is more farm management oriented, and both the present PDM as the potential successor have a role in the formation of a positive result. Gradually the influence of the present PDM increases, as he will try to influence the positive or negative intention of a potential successor. At the end of this stage the successor is designated. If the potential successor is not designated as successor, he exits the model.
- Succession stage (SS): The post-designation stage is the succession stage. Both the present PDM and the successor have an equal share of influence in this stage. The farm responsibilities are gradually transferred to the successor, and succession is completed at the end of this stage.

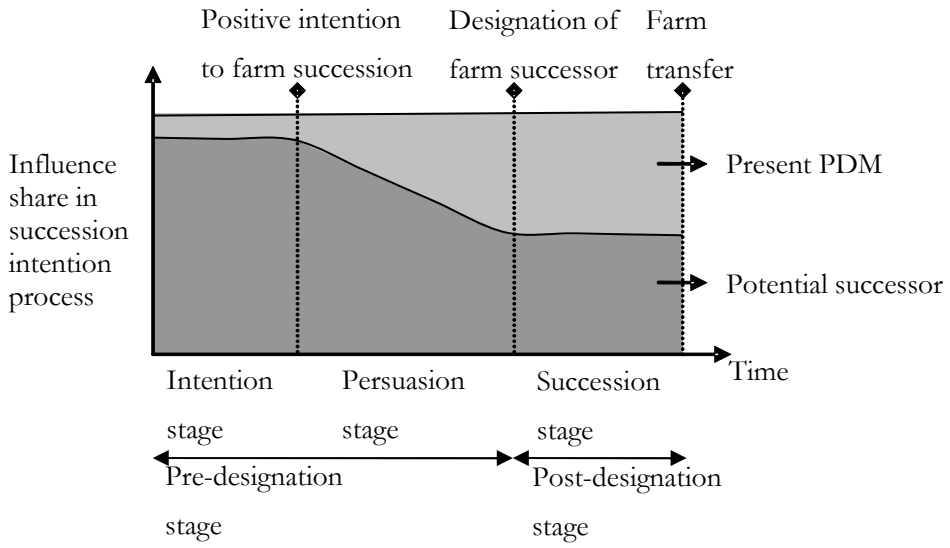

Figure 4.4 Share of influence of present PDM and potential successor in the succession intention process

Source: own compilation based on Ajzen 1985, 1988, 1991, Kimhi and Nachlieli 2001

Figure 4.5 indicates that in the different stages, a person can decide to not continue the family farm, and so to 'exit' the model. The expectation of continuing the farm is

assessed at each of the three stages of the model by means of a classification based on the following questions of the SIM questionnaire (Appendix 1):

1. Are you a farmer's daughter or son?

- Yes: Included as survey respondent (continue to 2)
- No: Not included in the survey

2. Are you willing to take over the family farm?

- Yes: Positive intended farm succession (continue to 3)
- No: Negative intended farm succession
- No idea: Uncertain about intended farm succession

3. Will you take over the family farm, or have you already taken over the family farm?

- Yes: Designated as farm successor (continue to 4)
- No: No designation as farm successor
- No idea: Uncertain about being designated as farm successor

4. Have you already taken over the family farm?

- Yes: Farm transfer
- No: Not yet final decision on farm transfer

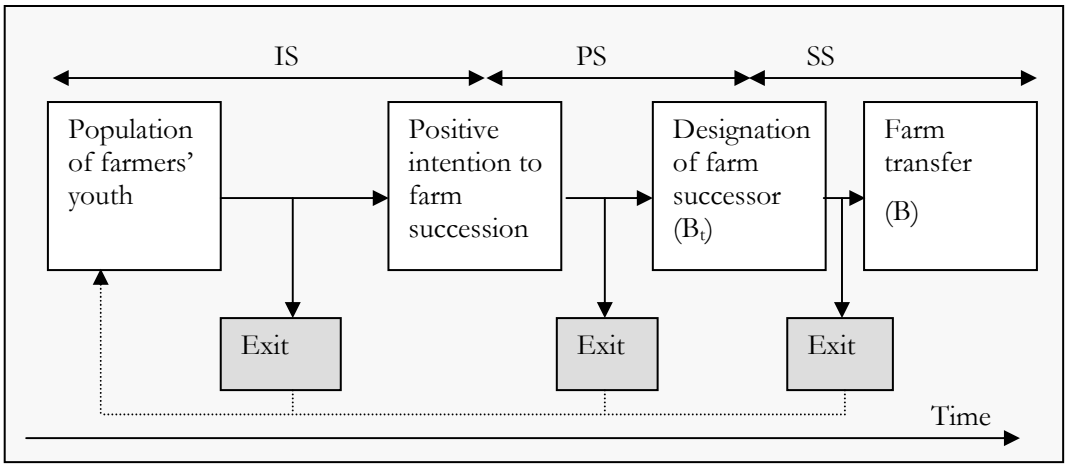

Figure 4.5 Farm succession intention stages

Source: own compilation based on Ajzen 1985, 1988, 1991, Kimhi and Nachlieli 2001

The outcome of each stage consists of either a positive intention/attempt to farm succession or the decision to withdraw from farm succession (exit). At the moment that a successor exits the model, he is included in the population of farmer's youth and has the possibility to reconsider farm succession.

In the continuation of this chapter, the point of view of the potential successor is taken into account, and not the point of view of the leaving PDM as proposed by Kimhi (1997). By doing so, we do not want to minimise the role of the leaving PDM in the succession process, but we argue that a good motivation by potential successors is a cornerstone for a fruitful farm transfer.

4.3.4.2. Influencing factors

As stated in the section 4.3.1, the SIM is influenced by personal considerations, the farm environment, the social environment and external influences. In order to measure these different aspects, 14 variables on beliefs related to farm transfer (Appendix 1, question 29 and 30), and 10 variables related to personal objectives (Appendix 1, question 48) are taken into account. The variables related to the perception are binomial variables. The variables related to the personal objectives are measured on a 7-point Likert scale. The 7-point Likert scale opens the possibility to handle the variables as being on a continuous scale.

The descriptive analysis of these 24 variables is given in Appendix 4. Through a Principal Component Analysis (Varimax), a data reduction is established and 7 factors are extracted with an eigenvalue above 1.10. The component matrix of this Principal Component Analysis is given in Appendix 5. The seven factors explain 41 per cent of the variance. The descriptive analysis of these factors is given in Table 4.5.

Based on the importance of each variable in the factors, the 7 factors are labelled and grouped according to a personal considerations, the farm environment, the social environment or external influences.

4.4. Results

4.4.1. Descriptive analysis of the farm succession intention stages

Figure 4.6 indicates the division of respondents according to their present position in the farm succession intention stages. The analyses are based on a total of 465 respondents. 19 per cent of the respondents had from the start no intention to take over the farm business of the parents. 50 per cent had a positive intended farm succession and 31 per cent had at the moment of filling out the questionnaire not yet made up their minds and were still uncertain about the intended farm succession.

From the 232 cases with a positive intention towards farm succession and that are within the persuasion stage or already passed it, 48 per cent (N=111) indicated to be designated by the parents as farm successor. Barring unforeseen events, they will continue the farm business and farm transfer is or will be established in the next years. Nevertheless, a considerable group of farmers' children with positive intention (45%, N=105) had not yet made up their mind. Multiple factors can influence them to decide to go for farm succession or to exit the process. A minority of those who reported an original positive intention (7%, N=16) decided in a later stage of the process to not take over the family farm. They can be said to leave at the PS stage.

Finally, in the last stage – the succession stage – the designated successor is gradually involved in the farm management. Farm management is gradually transferred from the present PDM to the future PDM. From the survey respondents, 23 per cent of those with a positive PS (N=26) have already passed this stage and have taken over the farm, while 77 per cent of these respondents (N=85) had not yet finalised the transfer process and were still in the succession stage. It has to be noticed that due to the snowball sampling the relative size of the different groups cannot be generalised. The main characteristics of the groups of respondents are given in Table 4.1.

As can be expected, the respondents, who are already designated as farm successors, are slightly but significantly older than the other groups of respondents. 65 per cent of the respondents were male. Female respondents were relatively more present in the group with negative intention for farm succession. The majority (85%) of the potential successors already designated as farm successor, were male. Most of the respondents are still living with the parents (87%). Only 24 per cent of the respondents is following or has finished higher education of four years or more (after secondary school). 68 per cent of the respondents followed agricultural education. The female respondents followed relatively more general higher education, while the male respondents frequented relatively more agricultural education.

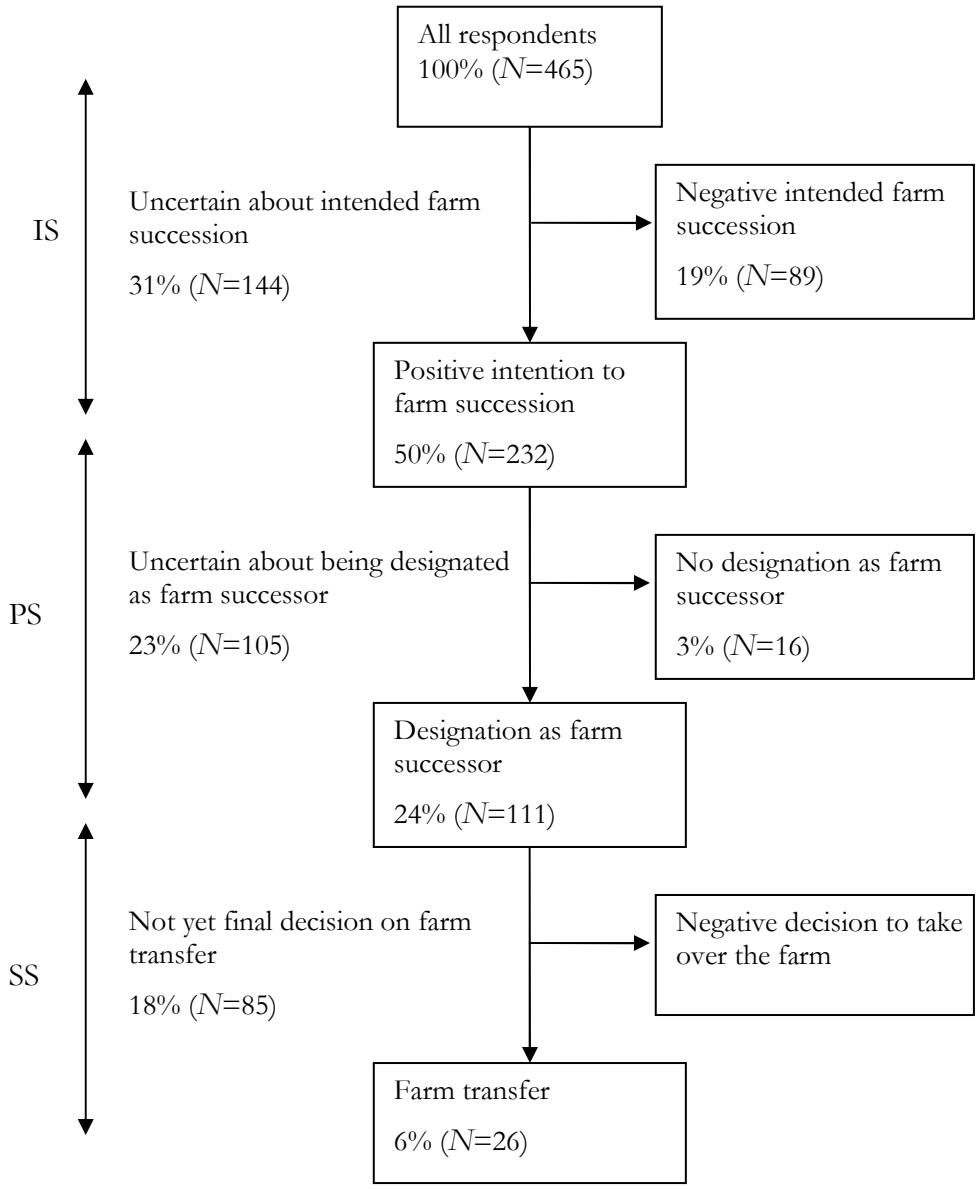

Figure 4.6 Group structure of survey respondents

Source: SIM questionnaire

Table 4.1 Main sample characteristics

	All respondents	Negative intended farm succession	Uncertain about intended farm succession	Uncertain about designation as farm successor	No designation as farm successor	Designated as farm successor	F-value / Pearson χ^2
Number of respondents	465	89	144	105	16	111	
Average age respondents (year)	22	22	21	20	22	23	5.664 ** a
Male respondents (%)	65	37	63	74	50	85	55.423 ** b
Highest school level (%)							30.709 ** b
Secondary school	40	34	38	36	50	49	
Higher education – 3 years	37	30	38	42	25	37	
Higher education – 4 years	15	15	17	18	18	10	
University	9	21	8	4	6	5	
Agricultural education (%)	68	37	62	80	69	87	67.205 ** b

Source: SIM questionnaire
**: Significant difference between groups at the 0.01 level
[a]: F-value
[b]: Pearson χ^2

4.4.2. Set of beliefs

This section gives the descriptive analyses of the set of beliefs of potential farm successors related to farm succession and job opportunities. The perceptions of the respondents are linked to their current succession intention stage.

4.4.2.1. Vision related to the future of Flanders agriculture

The vision of the farmers' children on the future of Flemish agriculture is linked with the different succession intention stages (Figure 4.7, Pearson χ^2: 94.352, p-value: 0.000). Farmers' children with a negative intended farm succession have a quite negative view on the future of Flemish agriculture: less than 40 per cent has a positive vision. On the other hand, farmers' children who are designated as farm successor see a bright future for Flemish agriculture and horticulture. Only 9 per cent has a negative perception about the future. The other groups of farmers' children have also relatively positive beliefs about the future of Flanders agriculture. They grew up within the agricultural sector and their experiences with the agricultural sector gives them trust in the future.

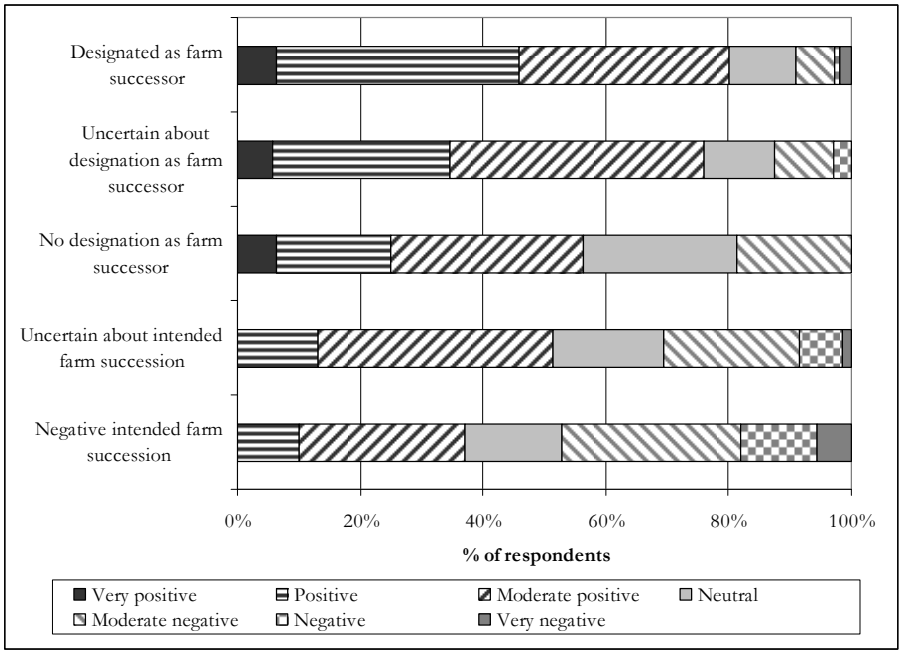

Figure 4.7 Farmers' children vision related to the future of Flemish agriculture

Source: SIM questionnaire

4.4.2.2. Motivation for farm succession in the persuasion stage

From the set of respondents with positive intentions (N=232) the motivation to take over the farm is linked to a kind of personal idealism (Figure 4.8). For the majority of the farmers' children in the persuasion stage, it is a childhood dream to continue the family farm. For the designated successors and those still uncertain about designation, farming is also the ideal job, which is not the case for those who are not designated as farm successor. The influence of the parents is not decisive in the motivation to take over the family farm. This is in contrast with the research of Glauben *et al.* (2005) who stated that people often feel the pressure to take over the farm, because it is still seen as a tradition.

The motivation is also related with educational choices. To a minor extent, but also important, are the farm characteristics that play a role in the motivation of potential successors.

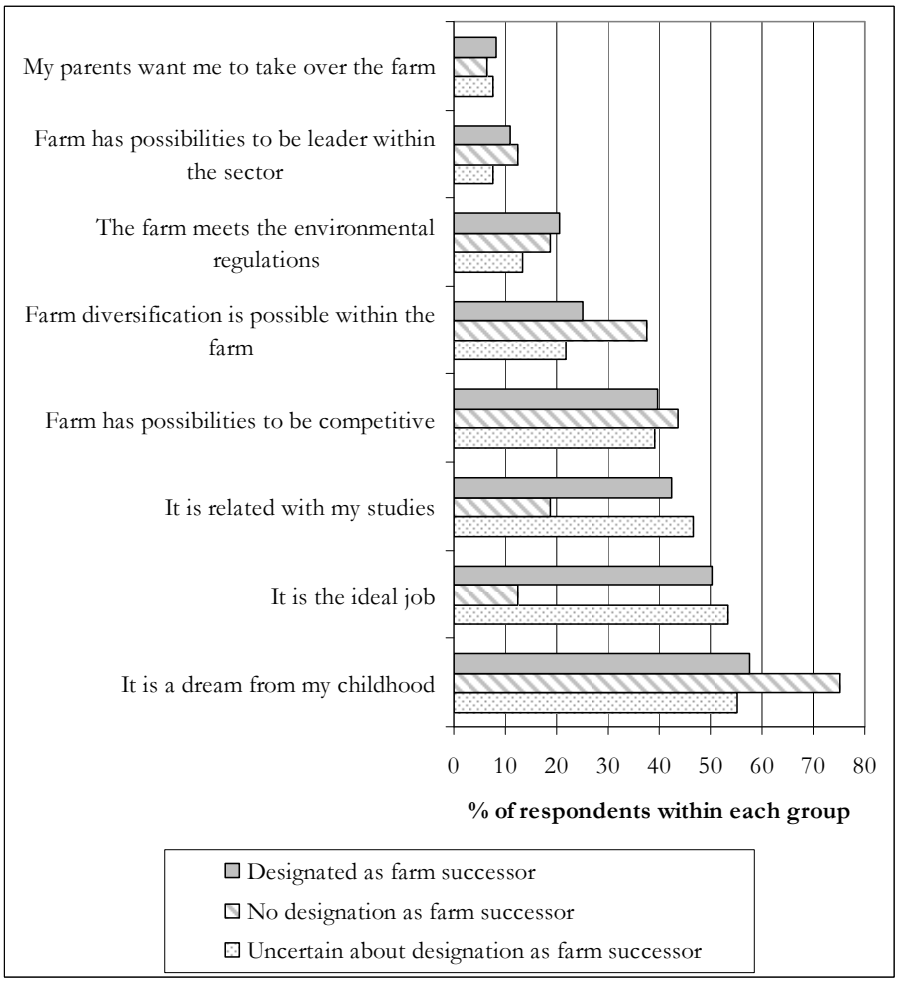

Figure 4.8 Motivation for farm succession in the persuasion stage

Source: SIM questionnaire

4.4.2.3. Envisaged problems of potential successors related to farm transfer

Figure 4.9 indicates the major envisaged problems related to farm transfer. Farmers' children without intended farm succession or uncertain about intended farm succession mainly focus on administration and (environmental) regulations as potential problems for farm transfer. Designated successors appoint financial regulations as a major problem, while the group of farmers' children who are uncertain about designation as farm successor or who are not designated as farm successor focus on the (financial) arrangements between the children. These results show that in the different stages of the farm succession intention model, potential successors attach a different importance at different aspects.

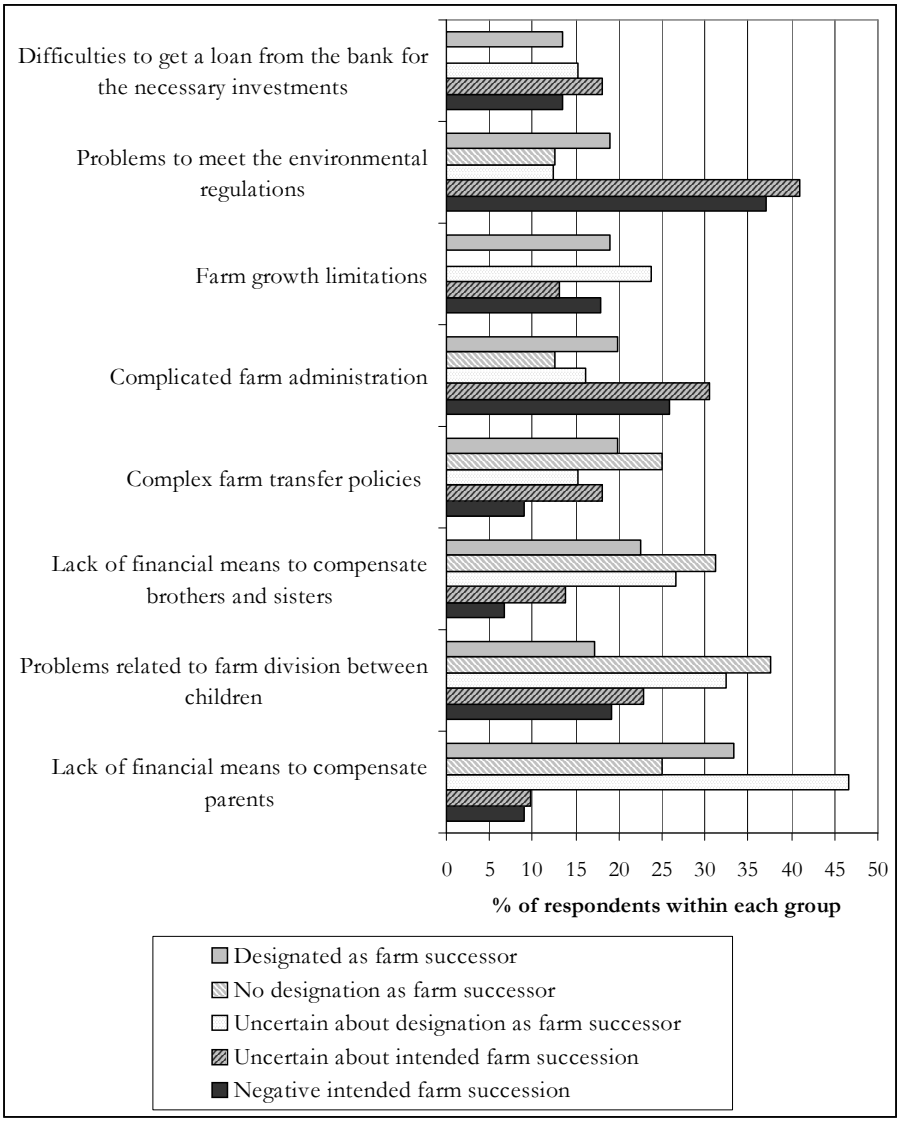

Figure 4.9 Envisaged problems related to farm transfer

Source: SIM questionnaire

4.4.2.4. Off-farm job opportunities

In general, farmers' children have positive beliefs related to work opportunities outside the farm (Figure 4.10, Likelihood ratio: 480.441, p-value: 0.000). The group with a negative intended farm succession has an optimistic view. They hardly see difficulties in finding a job, but as they are relatively young, the search for a good job is still rather far away. Also the group of designated successors sees a bright future related to off-farm job opportunities, but if everything goes well, they will not have to search for an off-farm job as they are designated as farm successor.

Farmers' children who are not designated as farm successor, have a positive intention about farm succession, but they will not continue the farm business. This entails that they will have to look for a job outside agriculture, and almost 30 per cent thinks that it will be difficult to find the ideal job. This group of farmers' children is most involved in the search for an off-farm job, and the link with reality gives them a more negative perspective, although the majority of this group is still positive towards off-farm job opportunities.

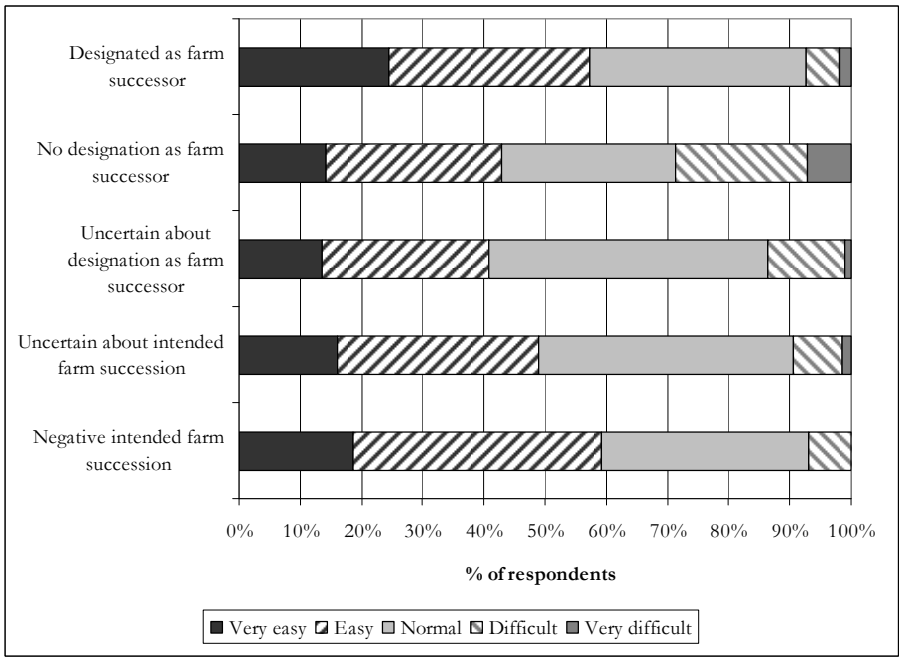

Figure 4.10 Attitude towards the availability of off-farm job opportunities

Source: SIM questionnaire

4.4.2.5. Future job in or outside agriculture?

The connection between farmers' children and the agricultural environment is reflected in their beliefs related to future job opportunities. Especially farmers' children without intended farm succession would look for a job outside agriculture (Figure 4.11, Pearson χ^2: 146.237, p-value: 0.000). The majority of this group does not feel a strong link with the agricultural sector and will take their own future non-agricultural perspectives into account when looking for a job.

In all groups of farmers' children, a considerable part of the respondents (average 34 %) wants still to work within the agricultural sector. The link with agriculture is strong enough to be willing to continue within the same sector as their parents did.

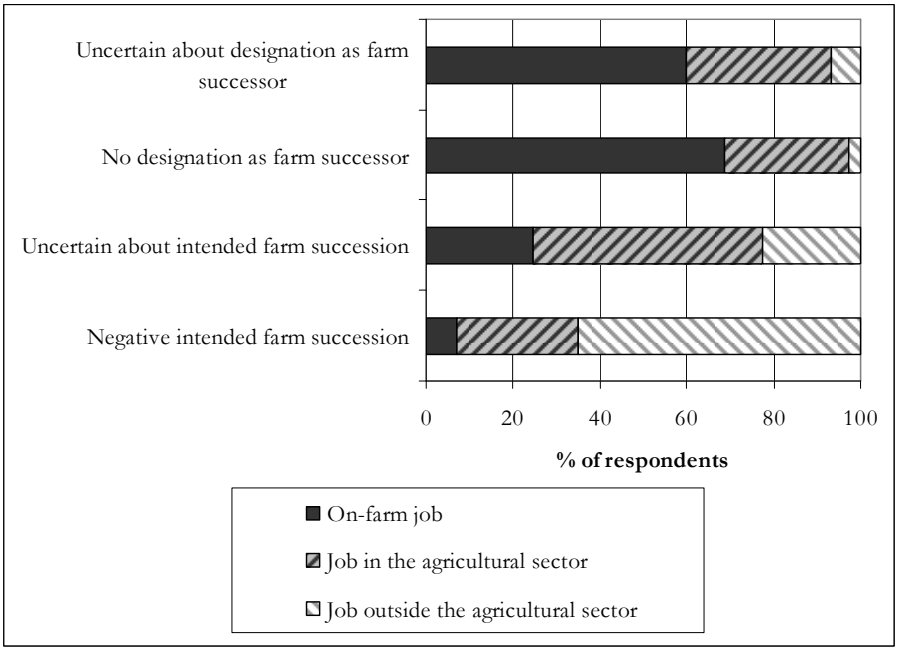

Figure 4.11 Future job in relation with the agricultural sector

Source: SIM questionnaire

4.4.3. Designation of farm successor

In the majority of cases, the successor is the child with interest in continuing the family farm (Table 4.2). This choice is made over the years and the future planning is reflected in the agricultural education.

Table 4.2 Way of designation of the successor (% of respondents)

Child with interest	55
Choice is made over the years	47
Child with agricultural education	19
Based on consultation of children	18
Oldest child/son/daughter	14
Youngest child/son/daughter	12
No idea	4

Source: SIM questionnaire

Table 4.3 Designation of successor based on family rank order and gender (Number of respondents)

		Transfer to son	Transfer to daughter	Transfer to several children
Family with several children	Oldest child	39	4	
	Not oldest nor youngest child	6	2	
	Youngest child	34	6	
	One son	51		
	One daughter		3	
Family with 1 child		7	3	
	Total	137	18	15

Source: SIM questionnaire

Table 4.3 indicates that the appointment of the successor is not based on the age order of the children, but we see that the farm is considerably more transferred to male than to female children. Transfer to multiple children is limited. Research states that the transfer to one of the sons is seen as a tradition (Gale 1993), resulting in the fact that transfer to a potential female successor is less likely (Simeone 2005). Daughters are not viewed as eligible successors, especially in families with both

daughters and sons, which is in accordance with our results. However we do not confirm that the age structure of the children matters in the appointment of a successor as stated by Kimhi and Nachlieli 2001, Silvasti 2003, Glauben *et al.* 2005.

The reason why, according to the farmer's children, the farm successor is not (yet) designated is different between the sub groups (Table 4.4). An important reason within all groups is the fact that parents not yet think about farm transfer. They are not yet far enough in their farm life cycle to focus on the transfer of the farm. For the group of negative intended farm succession, the lack of interest by the children is of major importance. Uncertainty about who will be the farm successor can be related with interest in continuing the farm by different children. According to our questionnaire, family conflict is not seen as a reason to not designate a successor.

Table 4.4 Reason why successor is not (yet) designated (% of respondents within each group)[a]

	Negative intended farm succession	Uncertain about intended farm succession	Uncertain about designation as farm successor
Parents do not yet think about farm transfer	26 (2)	49 (1)	56 (1)
Lack of children's interest	37 (1)	10 (2)	2 (5)
Interest by different children	1 (5)	9 (3)	27 (2)
Restricted farm viability	21 (3)	8 (4)	9 (3)
No idea	5 (4)	8 (4)	7 (4)
Family conflict	1 (5)	1 (5)	2 (5)

Source: SIM questionnaire
[a]: between brackets, the rank order within each group is given

4.4.4. Succession Intention Model

The SIM consists of 4 aspects that influence the flow through the farm succession intention stages, and the 7 factors attributed to each aspect are the following:

- Personal considerations:
    - Family mindedness related to farming
- Social environment:
    - Family related arrangements of farm transfer
    - Partner related problems

- Farm environment:
  - Farm growth limitations
  - Progressive farm management
  - Limited farm viability
- External influences:
  - Policy limitations

Because of the elapsed time during the transition from the intention stage through the persuasion stage and finally to the succession stage, the influencing aspects can have different degrees of influence in the different stages of the SIM.

Table 4.5 Descriptive analysis of restrained factors

Factor	Factors	Mean	SD	Minimum	Maximum	Cases
Personal considerations	Family mindedness related to farming	0.00	1.00	-2.88	3.35	465
Social environment	Family related arrangements of farm transfer	0.00	1.00	-3.44	3.06	465
	Partner related problems	0.00	1.00	-2.35	4.90	465
Farm environment	Farm growth limitations	0.00	1.00	-2.41	3.55	465
	Progressive farm management	0.00	1.00	-1.91	3.93	465
	Limited farm viability	0.00	1.00	-5.40	2.99	465
External influences	Policy limitations	0.00	1.00	-2.80	2.59	465

Source: SIM questionnaire

First, the individual influencing aspects are discussed. Second, the SIM is analysed.

4.4.4.1. Influencing aspects

4.4.4.1.1. Personal considerations (P)

In literature, a number of personal considerations related to farming and farm transfer are stated (Marshall 1961, Casson 1982, Gasson *et al.* 1988, Herrmann and

Uttitz 1990). Marshall (1961) states that risk taking is a defining characteristic of entrepreneurs. According to Casson (1982), farmers reduce leisure time in favour of providing additional support for investments in the initial stages of the business. According to Gasson, *et al.* (1988), farmers are willing to accept a low standard of living in return for unremitting hard work. Herrmann and Uttitz (1990) stated a number of general attitudes related to farming: independence, connection with nature, enjoyment and hobby, economic security and having family close by. A positive connotation with these intentions is assumed to increase the probability of farm succession.

Although the above stated personal considerations are tested in the light of farm transfer, the factor analysis restrains only one factor related to attitudinal considerations. The factor reflects the 'Family mindedness related to farming'. A high score indicates that not the highest income is aimed at, but within the farm context, the successor strives at the best solution for the farm and the family. This is reflected in the positive correlation with objectives such as collaboration with family members and seeing work as a hobby. The close linkage between family and farm explains the importance of the family within the person's intentions related to the family farm.

4.4.4.1.2. Social environment (S)

One of the prime objectives of family farms is the desire to pass on the business to the next generation. A certain expectation exists that the farm will continue over generations (Gray 1998), which has its consequences for the farm development (Potter and Lobley 1996b). However, social expectations change with generations. The life of older generations was structured by economic constraints and social expectations related to the family farm. Today, these aspects are less obvious for younger generations who have more opportunities from which they can choose (Villa 1999).

Because farming is still seen as a tradition (Glauben *et al.* 2005), young people often feel pressure to take over the farm. To a great extent, the near family performs this social pressure. In general, the expressed negative opinion related to farm transfer of the parents or partner is limited (Table 4.6), although a negative opinion of the partner can be an important limiting aspect in the intention stage of farm succession: this is reflected in the factor 'Partner related problems'.

Related to the social environment, the second factor in the Principal Component Analysis is the factor 'Family related arrangements of farm transfer'. A high score indicates that the potential successor takes into account the family interests in the practical arrangements of the farm transfer, e.g. difficulties of division of the family farm between children, involvement of parents in the management, setting up a firm for the family.

Table 4.6 Disagreement with farm transfer (% of respondents)

	Negative intended farm succession	Uncertain about intended farm succession	Uncertain about designation as farm successor	No designation as farm successor	Designated as farm successor	χ^2-value
By parents	11	6	4	0	1	13.401 **
By partner	4	17	9	6	2	21.373 **

Source: SIM questionnaire
** significant difference between succession intention groups at 0.01 level

4.4.4.1.3. Farm environment (F)

Some authors see the farm environment as the determining factor for farm succession: the location and the type of farming (Corsi 2004), the potential farm income (Gasson *et al.* 1988, Gale 1993, Hennessy 2002, Glauben *et al.* 2005, Simeone 2005), and so on, are all factors that have a high influence on farm succession. Research shows that farm transfer occurs more on relatively larger farms within a sub sector (Gasson *et al.* 1988, Glauben *et al.* 2002, Breustedt and Glauben 2007) and is more likely on full-time farms (Simeone 2005). On the other hand, research also reveals that profit maximisation and economic reasons are mostly not the main objectives in family farms (Boehlje and Eidman 1984, Gasson *et al.* 1988, Hennessy 2002).

Today much more than before, farm economic criteria will affect people's intention and decision to transfer a farm: a farm is no longer merely a 'way of subsistence', but has changed into a business that often struggles to survive. Objective criteria such as potential income, land prices, value of the farm equipment are of major importance for the viability of the farm, and thus for a potential farm transfer. However, the factor analysis indicates that all these aspects can mainly be covered within 3 main influencing factors related to the SIM: growth limitations, progressive farm management and lack of farm viability.

- The 'growth limitations' variable covers both the limitations in expanding the farm size, and the incapability of financing the growth of the farm.
- The 'progressive farm management' variable indicates that the respondent wants to further develop the farm by aspiring a high income, building a firm for the future, while he is envisaging the difficulty of finding enough labour to develop the farm, etc.

- The 'lack of farm viability' variable is reflected in outdated buildings and machinery in relation with the difficult search for enough financial means by financial institutions. A lack of farm viability hinders a positive vision towards farm transfer.

In literature, high importance is given to the farm characteristics such as type of farming, farm size, etc, but our results show that the three stated farm concepts, independent of e.g. farm type, give a view on farm transfer, and have an important but partial influence on the perception of potential successors related to farm succession.

4.4.4.1.4. External influences (E)

Intentions concerning farm succession are formed within a society. External influences can effect the decisions made by an individual person, who has no power to influence. The following is a selection of the obstacles mentioned in literature with reference to the study wherein the obstacle is mentioned:

- Uncertainties about policies (Glauben *et al.* 2002, Simeone 2005);
- Exposure to a non-farming home and work environment (Gale 1993, Glauben *et al.* 2002, Corsi 2004)
- Health of the farmer and the successor (Väre *et al.* 2005);
- Changes in the family and farm situation (Ajzen 1985, Väre *et al.* 2005);

These external influences are related with 'intertemporal inconsistency' (Horowitz 1992). They shift over time and can only be analysed in time series (not covered by this cross-section research). However, the presented subjective vision towards these elements can be indicative for the different stages within the SIM.

The factor analysis withholds one factor related to the external influences. The factor covers a number of policy constraints that young people encounter in the farm succession intention process. Major constraints are related with environmental policy and administrational obligations. Potential successors are hindered by the environmental and farm regulations associated with the contemporary intensive farming system in Flanders. They perceive the legislation and administrative obligations related to the farm transfer as a burden. A high score on this factor indicates that policy regulations are a major constraint in the process of farm transfer.

4.4.4.2. Analysis of the succession intention model

The relation between the four influencing aspects and the succession intention stages indicates that the seven factors each have their influence on the different stages of

the SIM (Figure 4.12, Table 4.7). The family mindedness, aiming at a good interaction between family and farm has an important influence in the intention stage. In this context, the agreement of the partner on farm transfer is decisive in the intention to farm succession. Also the policy constraints covering envisaged problems to meet environmental regulations, a complex farm transfer policy and a high administrative burden, is another decisive factor within the intention stage. In general, personal considerations, the external influences and to some extent the social environment determine if a potential successor is situated in the intention stage or in the following stages.

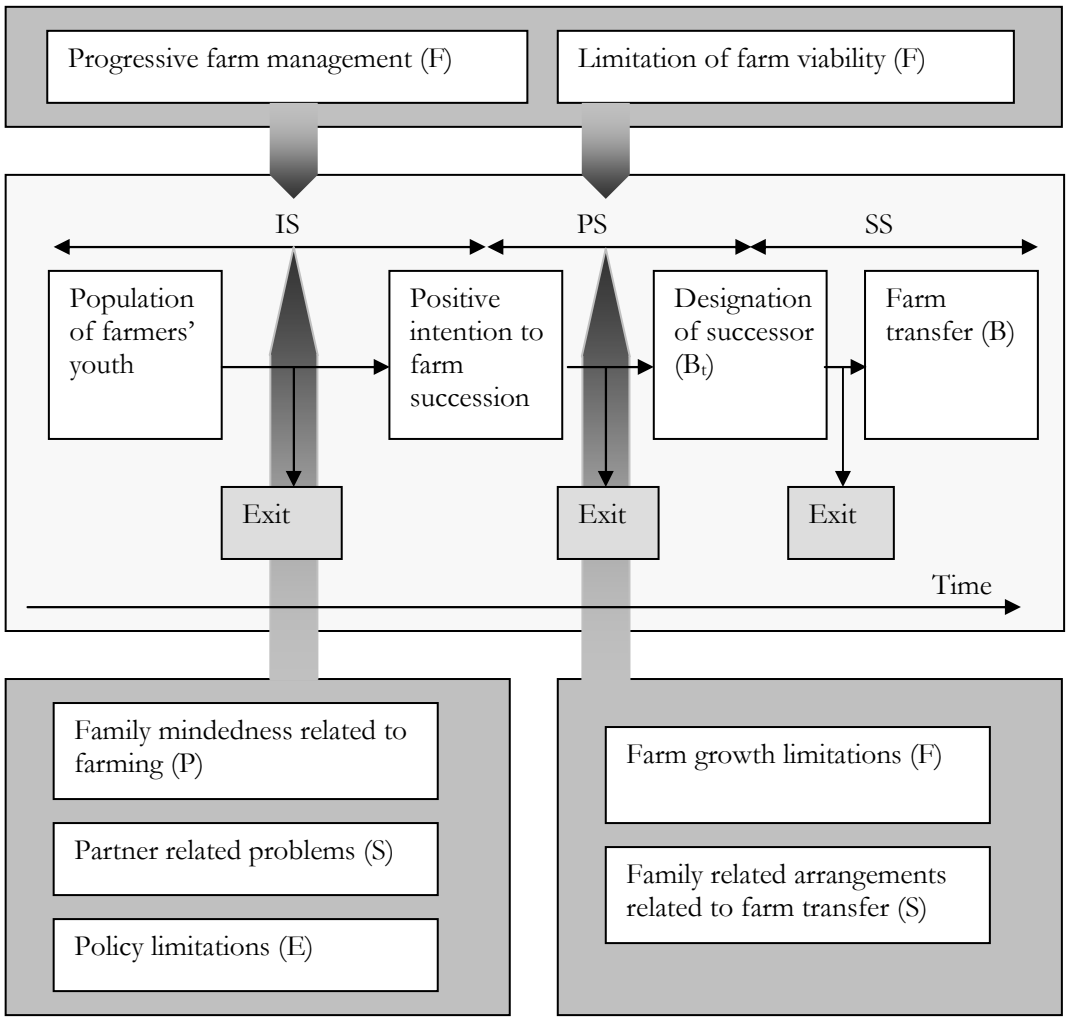

Figure 4.12 The farm succession intention model

Source: own compilation

Table 4.7 Analysis of variance of factors related to the farm succession intention stages (N=465)

		Negative intended farm succession	Uncertain about intended farm succession	Uncertain about designation as farm successor	No designation as farm successor	Designated as farm successor	F-value
	N	89	144	105	16	111	
P	Family mindedness related to farming	-0.288 a	-0.195 a	0.223 b	0.344 b	0.223 b	6.681 **
S	Family related arrangements related to farm transfer	-0.028 b	0.090 b	0.290 b	0.366 b	-0.422 a	8.523 **
	Partner related problems	-0.044 ab	0.232 b	-0.061 ab	-0.332 a	-0.160 ab	3.289 *
F	Farm growth limitations	0.352 d	0.140 cd	-0.295 ab	-0.540 a	-0.107 bc	
	Progressive farm management	-0.371 a	0.026 b	0.126 b	0.113 b	0.128 b	4.118 **
	Limitation of farm viability	0.212 b	-0.009 b	0.029 b	-0.439 a	-0.122 ab	2.235 *
E	Policy limitations	0.236 b	0.280 b	-0.394 a	-0.215 a	-0.149 a	9.618 **

**: significant difference between clusters at the 0.01 level
*: significant difference between clusters at the 0.05 level
a, b, c, d: group membership in Duncan post-Hoc test, indicating the significant group membership of the One Way Anova analysis

If one is situated further in the SIM, farm growth limitations and the family related arrangements related to farm transfer become decisive in whether the potential successor will really take over the farm. The succession plan becomes more concrete and practical considerations become more prominent than the ambition. Finally, both in the intention stage and persuasion stage, an intended progressive farm management is a stimulating factor related to the succession intention stages, while the limitation of the farm viability is a constraint.

The seven factors enhance each other, but the individual factors are not correlated, as they are the result of a factor analysis. The results confirm our hypothesis that

farmer's children take personal considerations, farm environment, social environment and external influences into account in the decision to continue the family farm.

Based on a linear ordinary least square regression in which the rank order of the succession intention stages is seen as a dependent variable (scale 0-3[7]), the degree of impact of each factor within the SIM is analysed (Table 4.8).

Table 4.8 Importance of the individual factors within the SIM (N=465)

	Variable	Coefficient (β)	β/st.er.	P[|Z|]>z
	(Constant)	1.581	34.612	0.000
P	Family mindedness related to farming	0.236	5.164	0.000
S	Family related arrangements related to farm transfer	-0.106	-2.311	0.021
	Partner related problems	-0.105	-2.295	0.022
F	Farm growth limitations	-0.223	-4.877	0.000
	Progressive farm management	0.169	3.692	0.000
	Limitation of farm viability	-0.123	-2.687	0.007
E	Policy limitations	-0.221	-4.828	0.000
Adjusted R^2		0.18		
Model test	F-value (7,449)	15.031		0.000

This analysis indicates that the family mindedness related to farming, the farm growth limitations and the policy constraints are the most important factor within the SIM: the attitude of the potential successor, in combination with external factors such as policy regulations and the possibilities to expand the farm, are important determinant factors for the succession intention stages. In the second place, the considerations of other involved persons and the farm environment influence the decision whether to continue the family farm.

[7] 0: negative intended farm succession; 1: uncertain about intended farm succession; 2: uncertain about being designated as farm successor; 3: designated as farm successor

4.4.5. Clustering of potential successors

The seven factors generated by the factor analysis indicate important aspects of the succession intention process. However, similar as not all factors are equally important in all stages, not all factors are equally important for all potential successors. Clustering of potential successors can highlight specific policy measures in order to reduce the constraints related to farm succession.

On the basis of the seven factors, a K-means cluster analysis is performed to group the respondents. Four clusters are restrained (Table 4.9). Eight outliers are not taken into account. It has to be noticed that due to the way the sample has been constructed, the relative number of respondents in each cluster is only indicative for the composition of the respondent groups and may not be extrapolated towards the total farm community, as we are not sure that each group has participated to the survey in the same degree.

The following clusters are defined:

- Businesslike expander (16%): The potential successor wants to enjoy work and perform in a good way. He has interest outside agriculture and is not focussed on the family aspect of the family farm. His partner does not fully support the farm transfer. Due to the obsoleteness of the farm, the farm viability and the availability of loans from the bank are questioned. According to this group, policy regulations are a limiting factor related to farm transfer.
- Family minded conservator (33%): This cluster consists of potential successor who envisage a rather conservative farm management and attach high importance on the family aspect of the family farm. They enjoy their work as a hobby and like to collaborate with family members. A high income and self-development are of minor importance. The major constraint is situated on the external influences: they perceive problems to meet environmental regulations and the policy related to farm transfer is too difficult.
- Family minded expander (26%): This group of potential successor is not hindered by policy regulations and administrative burdens, but they want to set up a firm for the family and are already concerned with the practical arrangements of the family farm. The most important constraints are related to farm growth limitations and obsoleteness of buildings and machinery: farm investments will be necessary to remain a viable farm business.
- Businesslike individualist (24%): At first sight, this group of potential successors does not see major constraints related to farm transfer, but if we look in detail, than it becomes clear that they do not have a positive intention to collaborate with family members, they do not want to set up a firm for the family, and do not want to enjoy work as a hobby. They strive for a high income and self-development. Their major personal objectives are not

focussed towards the continuation of the family farm, but are more directed towards an individual career.

Table 4.9 Analysis of variance of factors related to clusters of potential successors

		Business-like expander	Family minded conservator	Family minded expander	Business-like individualist	F-value
N		75 (16%)	125 (33%)	121 (26%)	109 (24%)	
P	Family mindedness related to farming	-0.096 b	0.252 bc	0.661 c	-1.053 a	76.771 **
S	Family related arrangements related to farm transfer	-0.154 a	-0.172 a	0.619 b	-0.304 a	18.670 **
	Partner related problems	1.011 c	-0.059 b	-0.252 ab	-0.527 a	66.950 **
F	Growth limitations	-0.378 a	-0.372 a	0.730 b	-0.015 a	30.239 **
	Progressive farm management	0.446 b	-0.633 a	0.240 b	0.253 b	29.437 **
	Limitation of farm viability	1.313 c	-0.250 ab	0.046 b	-0.313 a	171.041 **
E	Policy limitations	0.217 b	0.508 b	-0.370 a	-0.381 a	24.603 **

**: significant difference between clusters at the 0.01 level
a, b, c: group membership in Duncan post-Hoc test, indicating the significant group membership of the One Way Anova analysis

The relation between clusters and the succession intention stages indicates that the characteristics related to perception and objectives of farm transfer are significant different for the different succession intention stages (Table 4.10, Pearson χ^2: 24.390, p-value: 0.018). The cluster of 'businesslike expander' and 'family minded conservator' represent significantly more potential successors who are still uncertain about their intended farm succession. Potential successors who are uncertain about being designated as farm successor are significant more represented in the cluster 'family minded expander'. The cluster 'businesslike individualist' consists significantly more of farmers' children who exit the succession intention model in the first stage

(negative intended farm succession) or in a later stage if they are not designated as farm successor.

Specific policy recommendations that focus on the cluster characteristics can enhance the flow through the succession intention stages.

Table 4.10 Relation between clusters and the succession intention stages

	Business-like expander	Family minded conservator	Family minded expander	Business-like individualist	Total
Negative intended farm succession	14	29	19	27	89
Uncertain about intended farm succession	28	57	26	30	141
Uncertain about being designated as farm successor	15	29	42	19	105
No designation as farm successor	0	4	5	6	15
Designated as farm successor	18	33	29	27	107
Total	75	152	121	109	457

4.4.6. Policy recommendations

Based on the results of the SIM and the four clusters, the following policy recommendations can be made, targeting specific groups of potential successors.

In the cluster 'businesslike expander', significant more potential successors are uncertain about their intention to farm succession. Their low family minded attitude, in combination with necessary future farm investments ask clear information related to other legal farm structures. At policy level, alternative legal farm structures have to be reconsidered in order to develop a farm structure that suits the needs of the contemporary family farm, without laying a burden on the family. Moreover, education and extension services have to give more and clear information related to the characteristics and consequences of different legal farm structures.

Especially the potential successors of the cluster 'family minded conservator' envisage major problems with the policy regulations related to farm transfer. Transparency of policy regulations related to farm transfer can improve the perception of farmers' children related to farm succession. Simplification of farm administration and (environmental) regulations can raise the number of farmers'

children with a positive intention to farm transfer. An accessible farm succession policy can diminish the perceived policy related difficulties related to farm transfer.

Significant more potential successors of the cluster 'family minded expander' are uncertain about designation as farm successor. Due to the lack of available agricultural area, they envisage problems to expand the farm in the future. Agricultural policies have to stimulate the withdrawal from land use of PDMs without succession perspectives above the retirement age. The released agricultural land becomes available for competitive PDMs in order to increase the production. Hereby public authorities could envisage regulations for a better functioning of the land market or to support young farmers in obtaining extra land.

Finally, the cluster 'businesslike individualist' consist relatively more of farmers' children who exit the SIM. Although it is an important group, no specific farm transfer policy measures have to be taken, as they are not oriented towards the continuation of the family farm.

4.5. Conclusions

Farm transfer is of major importance for the continuation of family farms, and has been highlighted in the first axis of the European Rural Development policy 2007-2013 and national agricultural policies. Targeting the specific problems of farmers' children related to farm transfer can remove current barriers within farm succession.

The results of section 4.4.2 confirm that beliefs related to farming and farm transfer have an influence on the intention and behaviour of farmers' children with respect to farm succession. Positive beliefs form the basis of the succession intentions.

Farm succession is a long time process that can be visualised in a farm succession intention model (SIM) developed. The model is illustrated by the Flemish case for which through factor analysis, the objectives and perceptions of potential successors could be grouped in seven factors related to farm transfer. The family mindedness related to farm transfer, the partner related problems, and policy limitations are crucial in the intention stage. In combination with the farm environment, reflected in a progressive farm management, limitations of farm growth and farm viability, and the social environment taking into account the arrangement of the farm transfer within the family, a potential successor is situated in the intention, persuasion or succession stage. The results confirm that farmer's children take personal considerations, farm environment, social environment and external influences into account in the decision to continue the family farm. However, not all farmers' children are open to farm transfer and some farms lack viability and competitiveness to be transferred, but following policy recommendations may help potential farm successors to take over the family farm:

- Clear information related to legal farm structures helps young PDMs to consider which farm structure fits best the needs of the farm, taken into account the farm-family relation and without laying a burden on the family (Chapter 7).
- Transparency of policy regulations related to farm transfer can improve the perception of farmers' children related to farm succession. Simplification of farm administration and (environmental) regulations can raise the number of farmers' children with a positive intention to farm transfer. An accessible farm succession policy can diminish the perceived policy related difficulties of farm transfer.
- Due to the lack of available agricultural area, potential successors envisage problems to expand the farm in the future. Agricultural policies have to stimulate the withdrawal from land use of PDMs without succession perspectives above the retirement age. A better functioning of the land market and specific support for young PDMs who need land to expand their farm to be viable, may help to make the land available for competitive PDMs in order to increase the production.

As the majority of possible farm successors follow agricultural education, specific attention should be given to the farm succession problem and related legislations during this training in order to decrease perceived problems. Although economic perspectives will continue to dominate (and thus result in a further decrease of the number of farms), it is obvious that creating a more stimulating environment through more specific extension and other services could decrease the exit among potentially positive inclined successors. That responsible authorities are becoming aware of this is for Flanders proven by the fact that the Flemish government has announced some specific policy actions such as increased attention in education and participation of PDMs in extension programs focussed on farm succession.

Chapter 5 – Influence of succession on investment decisions[8]

5.1. Introduction

According to Gale (2003) and Williams and Farrington (2006), the current slow-down in the entry rate of young farmers can be explained largely by structural changes, increasing capital requirements, low expected rates of return and higher off-farm career opportunities. These changes raise two main questions: (1) which farms will remain viable as family farms in an environment marked by a decreasing number of farms and (2) can agricultural policy stimulate the transfer of viable and competitive farms? The second question is important, as stimulating the entrance of young farmers may have impact on the entire farming sector. Young entrants are more innovative, more motivated towards the longer term and better able to adapt. Their entrance makes the sector more productive, competitive and viable (Williams and Farrington 2006).

Important questions are (1) whether this stimulation effect starts at the moment of farm transfer, or whether the designation of a successor itself has already an influence on the competitiveness and (2) what is the role of succession and retirement policies within this process. On the one hand, policies helping PDMs before the succession actually takes place may allow a higher number of farms to remain viable and be transferred. On the other hand, retirement policies may focus on making the exit of non-viable farms easier through measures such as increased pension rights, possibilities for finding new living quarters and so on. These policies may help to transfer the assets of non-viable farms to viable ones, which may also ultimately result in a higher number of viable farms. To this end farms need to be categorised so that the most adequate policy instrument can be used in each case: investment policies for those farms with possibilities for succession, and early retirement or related schemes for those that are not viable in the long run.

The first part of this chapter (Section 5.4) proposes and validates Total Farm Assets (TFA) as an explanatory variable related to the transfer of family farms. The objective is to explore the potentials of this indicator that identifies viable farms at an

[8] Part of this chapter has been published in Sociologia Ruralis: Calus, M., Van Huylenbroeck, G., Van Lierde, D. (2008). *Relationship between farm succession and farm assets on Belgian farms.* Sociologia ruralis, **48**(1) 38-56.

early stage. If the targeting of policies can be improved by using this indicator, the goals of the EU Rural Development Policy can be achieved more successfully.

The second part of the chapter (Section 5.5) builds further on the TFA as indicator for farm transfer. A first econometric model estimates the influence of the successor on farm investments before farm transfer. This model is based on the concept of the succession effect (Potter and Lobley 1992, Kimhi *et al.* 1995). A second model tests whether the designation of the successor at the end of the farm life cycle has an effect on the post-succession investment decisions.

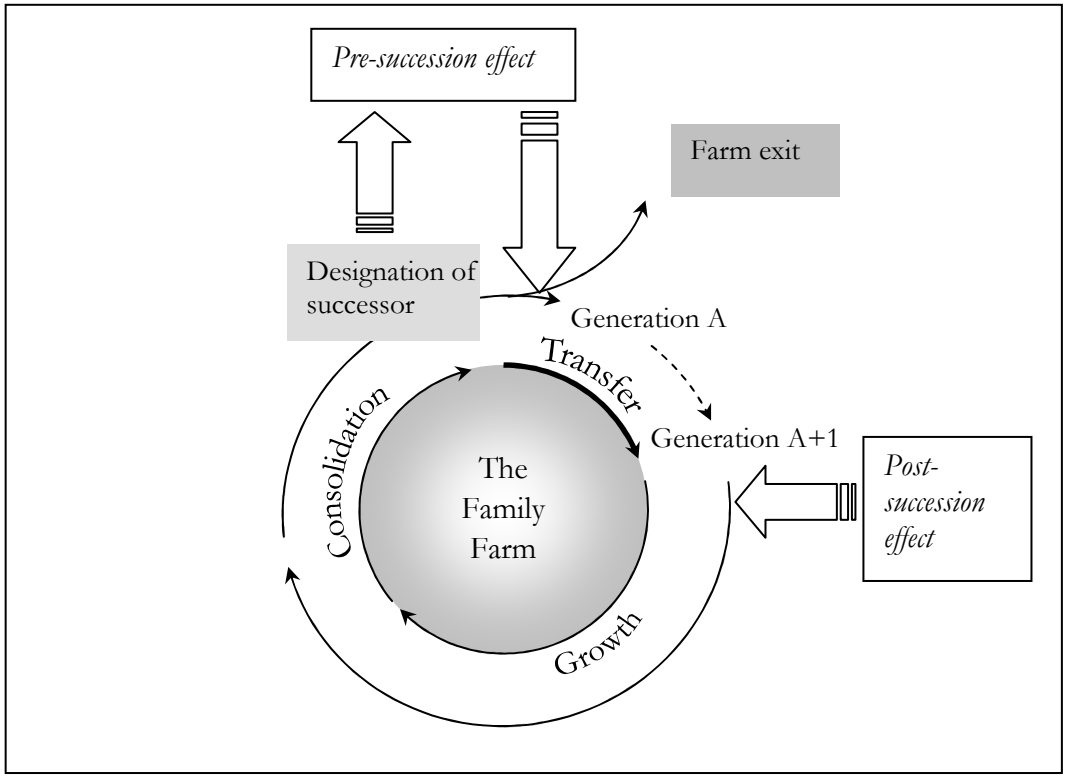

Figure 5.1 Economic aspects related to investments, within the farm succession cycle model

Source: own compilation

5.2. Theoretical framework: asset fixity theory and transaction costs

Managing the family farm is not only based on the attempt to maximise the present value of the farmer's disposable income or to optimise the farm's net worth (Boehlje and White 1969; Gasson *et al.* 1988). Other goals, such as maintaining control of the business and passing on a secure and sound business to the next generation (Errington 2002) are important for the farming family as well. This has both business

and family implications. It means that the business has a longer than usual planning horizon that is measured in generations rather than years, and that securing long-term survival may be even more prominent among the firm's objectives than maximising short-run gains. The structure and operation of the farm may even be adapted to the coexistence of two families during the transfer period, as well as to the possibilities of remaining a viable farm in sole proprietorship.

At the end of the farm life cycle, succession perspectives play an increased role in farm management. Two strategies can be distinguished:

- If the farm is transferred within the family, the viability of the farm will be optimised.
- If the farm is stopped, the liquidation value will be optimised.

The outcome that is selected can be explained by combining asset fixity theory and transaction cost theory.

5.2.1. Asset fixity theory

Asset fixity theory (Johnson 1955) asserts that assets in a farm business remain fixed as long as their expected value in their present use is lower than the cost of increasing their amount and remains higher than their value in an alternative use. The difference between the extra investments and the value at which the farm could be sold is defined as the asset fixity trap (Figure 5.2) (Hsu and Chang 1990).

Within the asset fixity trap, it is accepted that total assets on farms with a designated successor will remain fixed during the consolidation stage (Figure 5.2). In the short run (before the successor is designated) only limited changes or investments will be made in order to increase the viability of the farm at transfer. This is because the cost of altering the quantity of a given asset is higher than the benefits that can be derived once those future benefits are discounted for uncertainty about the succession. The availability of a successor will encourage farm improvements and these long-term perspectives can help to justify investments.

Farms with no future perspectives cannot justify farm-specific investments because the acquisition costs exceed the gains in market value. The expected value of the farm will therefore tend toward the value of liquidation due to the lack of farm-specific investments and the obsolescence of buildings and machinery. Older PDMs without successors will proceed to run down their businesses and start consuming their material assets and tenant's capital (Potter and Lobley 1992). At the end of the farm life cycle, the farm can be sold at the value of liquidation.

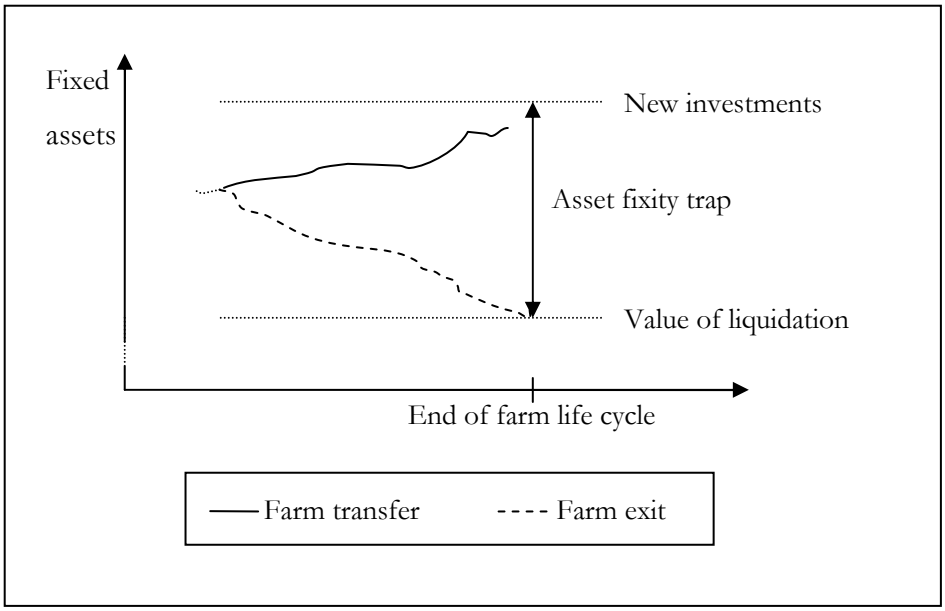

Figure 5.2 Asset fixity related to the end of the farm life cycle

Source: own compilation based on Johnson 1955, Hsu and Chang 1990, Potter and Lobley 1992

The investment behaviour of PDMs without successors will thus be radically different from PDMs with an identified successor (Potter and Lobley 1992). The timing of farm transfer will therefore determine the value of the assets transferred (Figure 5.2). This timing decision must maximise the present value of the farm and has a major effect on the future profitability of the farm (Kimhi 1994).

5.2.2. Transaction cost theory

Besides the fixity of assets, the transaction cost theory may also explain farm transfer decisions. This theory is an extension of a neo-classical framework because it recognises that profit maximisation is limited by bounded rationality and opportunistic behaviour. The definition of a transaction in new institutional economics is 'an exchange which occurs between two stages of the production/distribution chain as the product changes in form and/or in ownership rights' (Hobbs 1995). According to transaction cost theory, a transaction can be determined by the asset specificity, uncertainty and frequency (Williamson 1979).

The transfer of a farm can be regarded as a transaction between the current property holders and the new ones. The new property holders can be the farmers' descendants who are interested to continue farming or someone outside the family who is interested in buying the farm.

Due to their specificity, farm assets are, in general, less useful for non-farm activities. At individual farm level, asset specificity can differ, depending on the degree to

which the assets can be redeployed in alternative uses, or by alternative users without sacrificing their productive value. When highly specific assets are involved, the degree of dependence between transaction partners grows beyond normal levels, as well as the possibility (and benefits) of opportunistic behaviour, because highly specific transactions also imply asymmetric information (Williamson 1996). In such situations, the first consequence is the high information and negotiation costs for the transaction partners. When a farm is transferred within the family, information on the specificity of the assets is more easily available for both transaction partners (parents and children), so this element of transaction cost is lower. The fact that no farm-specific investments are realised if no successor is designated decreases the specificity of the farm assets, thus reducing the transaction costs of passing the farm on to people wanting to start new farm activities or even non-farm activities on that location (as far as is allowed by legislation and regulations).

A second aspect that can affect the transaction cost of a farm transfer is uncertainty, which can be exogenous or endogenous. Changes in legislation and environmental conditions are exogenous factors that influence the transfer possibilities of a farm. When general economic conditions or specific farm conditions are clear and good, a transfer will be more likely than in case of an uncertain or unfavourable policy or economic environment. Endogenous uncertainty concerns individual behaviour. The degree of uncertainty is expected to decrease when the parties involved are family members as, in most cases, convergent expectations and goals concerning such matters as the survival of the farm become prominent. The reciprocity of this expectation creates a better environment for realising transactions.

The last factor that influences the transaction costs is the frequency of the transaction. The transfer of a family farm is a transaction that normally occurs ones in a farm life cycle, or in a generation, implying that the transaction cost will increase as the transaction is rare for the family farm.

5.3. Methodology

5.3.1. Valuation of family farms at the moment of farm transfer

In literature, estimates of the valuation of family farms are often based on farm size and standard farm income. Within this research, it is important to look at the valuation of family farms at the moment of farm transfer. TFA is proposed as measure of farm valuation at the moment of farm transfer.

The farm size (Upton and Haworth 1987, Weiss 1999, Rizov and Mathijs 2001) takes into account the land available for production, and is a first tool to measure differences between farms within the same (land related) farm sector. Due to differences in land use between different sectors (e.g. arable production and green houses), farm size is not an appropriate valuation method related to the whole

farming sector. Moreover, the size of a farm is a weak potential determinant of farm succession because limited expansion possibilities, in particular in a peri-urban context such as in Belgium and the development of lower land-related production activities makes this parameter less relevant as an indicator of the likelihood of farm transfer. The intensity of agricultural production can indeed influence farm survival, apart from any link to farm size.

The relationship between succession and standard farm income (Pfeffer 1989) is also not straightforward. The sale of parts of a farm may result in temporarily high liquid assets but endanger the future of the farm, and conversely, increased investments can reduce present liquid assets, but ensure the long-term future of the farm. At the moment of farm transfer, SGM does not take the farm value as such into account.

Both farm size and standard farm income only partially reflect a farm's business value. At the moment of farm transfer, the valuation of the family farm has to reflect the productive capacity, e.g. the value of the assets that have to be transferred to the successor in order to be able to continue to family farm. Based on accounting, the total farm assets represents the value of all assets of the farm and thus indicates the productive capacity of the farm, without taking into account the way these assets are financed. But as assets and liabilities are in balance, it also represents the farm's financial value and thus any possible financing difficulties for the successor. Assets give also the possibility to look at the farm in a long term perspective: as assets can be controlled by the owner of the enterprise, they can be expected to provide future benefits by contributing directly or indirectly to future net cash flows and they are the outcome of a prior event or transaction (UNCTAD 2006).

TFAs are, however, seldom used in the literature as an indicator of farm value, even though they reflect the total present value of the farm and form the basis of investment evaluation. Reasons for this may be that (1) TFA is an indicator which can only be extracted from accounting, thus not easily available, (2) these assets do not take into account the way the farm is financed (through debt financing or owners' equity), and (3) at the moment of farm transfer, the TFA of the family farm is not used in practice to sell or transfer the farm. In case that the farm is sold, the farm value can differ from the TFA due to e.g. the free market, land prices that are not in accordance with the book value of the land, manure emission rights that influence the value of land,… In case that the farm is transferred to the next generation, the division of the farm over the sibs might influence the price of the family farm. This implies that the TFA does not represent the value at which the family farm will be sold or transferred to the next generation, but the TFA represents the current value of all farm assets that make it possible to continue the family farm.

5.3.2. Calculation of total farm assets

Based on section 5.3.1, we use TFA as a measure of farm value at the moment of farm transfer. The TFAs consist of two major parts.

The first are the fixed assets that are non-current assets and cannot easily be converted into cash. These include the current value of the land owned, soil improvement, buildings and constructions, permanent crops and production rights. The leased land is not taken into account in the value of the total farm assets, because at the moment of farm transfer, the value of these lands are not transferred (CLE 2000).

The second part consists of current assets, that is, the share of the firm's current assets that fluctuate in response to seasonal or anticipated short-term needs and which are consumed in the short term or require ongoing reinvestment to maintain their value. These include the current value of animals, machinery and liquid assets (CLE 2000).

The value of farm assets represents the book value. Within this research, all data used are extracted from the same accounting database. However, if this indicator is used in a broader context by making use of different accounting databases, it has to be assured that TFA is build in the same way in order to compare TFA on the same grounds.

The long-term influence of management capacity and cost-effectiveness is better reflected by the TFA trend than by changes in the standard farm income or the farm size, although we do not intend to use TFA as the value of the farm at the moment of farm transfer as this is influenced by external factors such as the free market and influence of sibs.

5.4. TFA as indicator

5.4.1. Methodology

5.4.1.1. Hypotheses

Within this section the following hypotheses are tested:

3. *There is a positive relationship between a farmer's early awareness of whether a successor is available and the management of the farm*
4. *The discrepancy between the intended succession and the actual succession is smaller on farms with a higher TFA*

Within this section hypothesis 3 is tested in a descriptive way. Section 5.5 will test this hypothesis in an econometric way.

Hypothesis 4 tests the discrepancy between the intended succession and the actual succession is smaller on farms with a higher TFA (Van der Meersche and De Marez 1997). Discrepancy between intention and behaviour might exist for a number of reasons. Individual preferences might vary over time due to changes in both the economic environment and the family situation (Ajzen 1985). Other reasons may be that new information becomes available and leads to a revision of the first decision, that financial perspectives may change, or that the potential successor receives an attractive job offer outside the sector (Väre *et al.* 2005).

5.4.1.2. Data

Within this chapter, we make use of secondary panel data extracted from the Belgian Farm Accountancy Data Network (FADN) database. Panel data refer to any data set with repeated observations over time for the same individuals. 'Individuals' can be workers, households, firms, or governments (Arellano 2003). As the number of observations is not equal for all individuals, the panel is unbalanced. In our dataset, the maximum number of observations per farm is 15 and the minimum is 1.

A first sub sample is used for the descriptive analysis (Section 5.3) and to analyse the pre-succession effect model (Section 5.5). The pre-succession effect model focuses on the influence of the designation of a successor on pre-succession investment decisions. As succession perspectives become clear from a certain age of the children, a sub sample of those farmers aged 45 years or more was selected. Our data set contains a 15-year observation period (1989–2003) resulting in an unbalanced panel of 4,366 observations on 713 farms. During the 15-year time period, farm transfer was observed on 197 farms. 351 PDMs had decided not to have a successor. On the remaining farms (165), a successor was not yet designated.

Table 5.1 gives descriptive statistics for the farms sampled, based on the 2003 accounting year. The total sample is divided in 3 groups based on the designation status of the successor. The high differences in land use among the farms sampled are explained by the inclusion of landless pig and poultry farms. The standard gross margin (SGM) can be used to overcome the difference in land use, but has limitations at the moment of farm succession, as it does not take the farm value as such into account. SGM and TFA have a correlation of 0.731**.

Table 5.1 Descriptive statistics of the sampled Flemish farms (2003)

		Mean	SD[c]
Successor designated	N	44	
	TFA[a]	632,719.02	314,311.75
	SGM[b]	3,264.55	2,224.48
	Farmer's age	56.52	5.39
	Farm size (ha)	53.25	37.01
	Labour (full-time equivalent)	1.93	0.64
No successor designated	N	86	
	TFA[a]	336,925.79	227,596.47
	SGM[b]	1,993.16	1,293.89
	Farmer's age	52.64	6.32
	Farm size (ha)	29.94	19.50
	Labour (full-time equivalent)	1.37	0.38
Successor still uncertain	N	105	
	TFA[a]	471,876.37	294,627.26
	SGM[b]	2,549.98	1,430.09
	Farmer's age	51.88	5.78
	Farm size (ha)	38.30	22.50
	Labour (full-time equivalent)	1.56	0.44

Source: FADN database
[a] TFA: Total Farm Assets (€)
[b] SGM: Standard Gross Margin (€)
[c] SD: Standard Deviation

5.4.2. Empirical results

Hypothesis 3 tests whether we can see a difference in the development of the TFA from the moment that a successor is designated. As can be derived from Figure 5.3, the designation of a successor does indeed result in an increase of the TFA. This is consistent with our hypothesis that certainty about a successor influences farm management by stimulating new investments. On farms where the successor has not been designated and where uncertainty about the long-term continuation of the farm

still exists, we see no significant changes in the TFA as long as this situation persists. If no successor is designated, the TFA does indeed decrease toward the liquidation value of the farm.

Time-series data are used to visualise the change in the TFA in different subgroups (Figure 5.3). On average, we can observe an increase of the TFA over time for the entire set of farms, but the rate of increase in the TFA differs between farms with different succession perspectives. The distinction between farms with an intended successor and farms without a successor (composed of both farms without successors and farms where succession is still uncertain) shows that, on average, higher asset farms have better succession perspectives, while farms with less assets face more difficulties in being transferred. Furthermore, the gap between these groups grows over time.

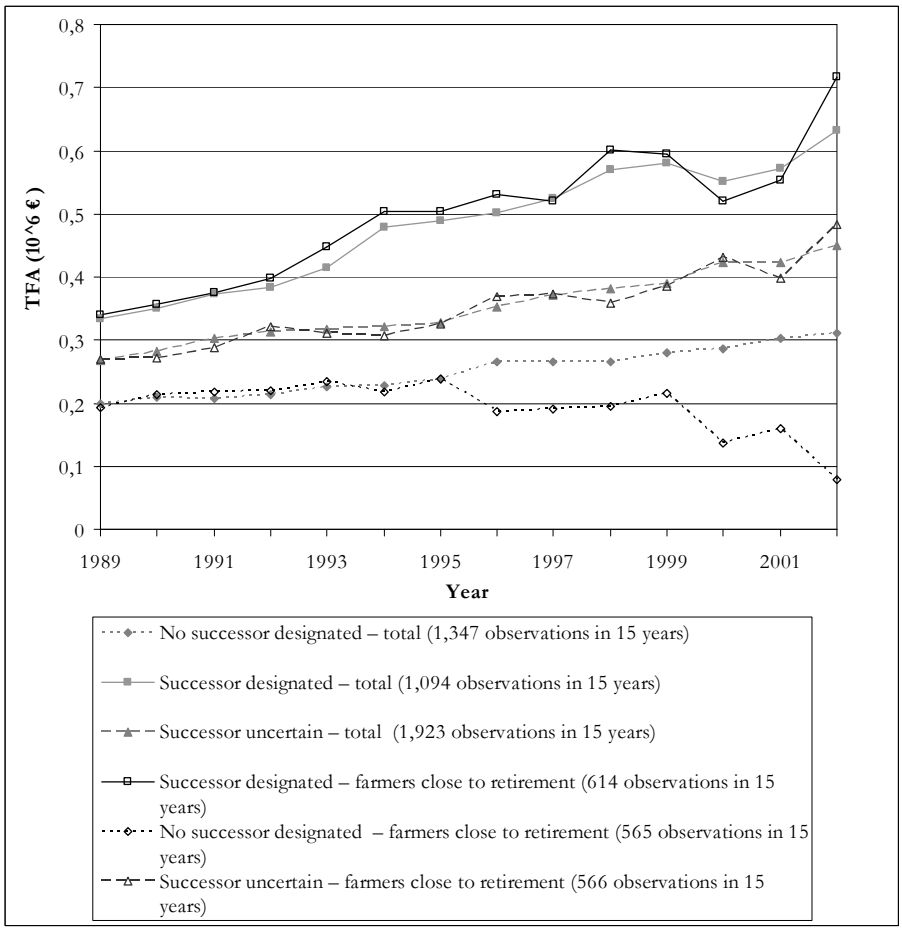

Figure 5.3 Development of average TFA per year, according to the presence of a successor

Source: own calculations based on FADN database

Appendix 3.1 indicates that for all years, the TFA between groups with different succession intentions significant differ. The difference becomes even more clear when only PDMs close to retirement age are considered. This group of PDMs is made up of those who reached the age of 65, which is retirement age, during the period 1989–2003. On farms with PDMs close to retirement age and without a successor, the TFA decreases gradually towards the value of liquidation. In Figure 5.3 no further differentiation is made according to the stage in the farm life cycle. These age-specific differences are indicated in Figure 5.4.

Figure 5.4 Average TFA per age category, according to the presence of a successor

Source: own calculations based on FADN database

Figure 5.4 shows that in the age group of PDMs between 45 and 60 years old, a significant difference exists between those who are certain about succession and those who are not. Specifically, PDMs with a designated successor maintain a higher TFA.

These farm development patterns are confirmed when looking at the relative change in TFA. Figure 5.5 illustrates this by plotting the relative change of TFA between year *t* and year *t-2* ($\Delta TFA_{t-2} = (TFA_t - TFA_{t-2})/TFA_{t-2}$) and similar patterns can be observed for ΔTFA_{t-1}, ΔTFA_{t-3}, ΔTFA_{t-4} and ΔTFA_{t-5}.

For PDMs between the ages of 49 and 60, we observe a significantly higher growth on farms with a successor than on farms where the successor has not yet been designated. Farms without a designated successor have on average a zero to negative growth. Before the age of 49 and after the age of 60, no significant difference between these groups occurs. The negative growth on farms without a successor

begins at the age of 57 and confirms the hypothesis that these farms start to disinvest as is also stated by Potter and Lobley (1992) and Phimister *et al.* (2004). The designation of a successor encourages further farm investments, but if no successor is present, such investments are not justified and the farm value starts to decrease because the replacement value becomes lower. These finding are consistent with the theory of asset fixity.

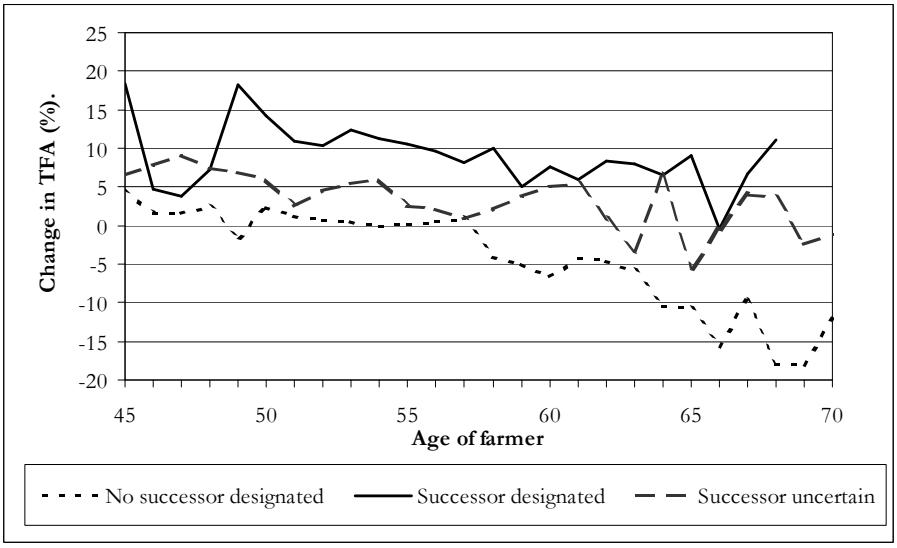

Figure 5.5 Relative change in TFA per age, according to presence of a successor (ΔTFA_{t-2})

Source: own calculations based on FADN database

To be used as a general indicator for farm succession, the TFA growth should be independent of the farm type. Analysis does not show significantly different TFA development patterns according to farm types, meaning that TFA is a more suitable indicator than farm size or SGM to be used as general indicator for succession perspectives (Appendix 3.2).

Our analysis confirms that, in general, farms with higher TFA and a relatively higher growth in TFA have a higher probability of having a successor. Before using TFA as an indicator for succession, however, we should also investigate whether a relationship between intention and behaviour exists. Intention of succession can be defined as the designation of a successor, and behaviour as the formal transfer of the farm. In the FADN database, PDMs are asked to indicate every year whether they have a successor. In case of a negative or unknown answer, we may assume no fixed succession intention. Because behaviour can be observed only at the moment of farm transfer, only the data of PDMs close to retirement age are used (N = 266) to test the hypothesis.

One year before farm transfer or exit, 41.7 per cent (N = 111) of the PDMs in this sample declared they had a designated successor (Table 5.2). Nevertheless, on 30 of these farms no farm transfer was observed, which may be due to the fact that the PDMs were too optimistic about their succession plans. On the other hand, on the same number and percentage of farms (111, or 41.7 per cent), a farm transfer was observed, and in 27.0 per cent (N = 30) of those cases a successor had previously been uncertain, which can be attributed to unplanned behaviour. However despite these exceptions, the general pattern as shown by Table 5.2 is a high significant relation between intention and behaviour (Pearson χ^2: 78.995; *p*-value: 0.000).

Table 5.2 Relationship between the assignment of a successor and farm transfer in the year before observed farm transfer or farm exit (number of farms)

		Intention	No intention		
		Successor designated	Successor still uncertain	No successor designated	Total
Behaviour	Farm transfer 1989–2003	81	18	12	111
No behaviour	No farm transfer 1989–2003	30	50	75	155
Total		111	68	87	266

Source: own calculations based on FADN database

In a time period of 10 years prior to farm transfer or farm exit, the intention of succession can change due to changes in the external environment or for personal or farm reasons (Figure 5.6), showing a high dynamic behind the process. Only for 44.1 per cent of the farms, the succession intention remained unchanged over the period. Of these, 4.4 per cent had a successor, 65.0 per cent had no successor, and 30.6 per cent was uncertain about succession. On average, each year 8 per cent of the farms indicates a change in their succession perspectives. In the 10 years prior to farm transfer or exit, uncertainty in succession plans becomes more significant in 55.4 per cent of the changes. This pattern can be explained by the fact that the wish or perception of the farmer is not always in accordance with the future plans of the children (Chapter 4). As Figure 5.4 and Figure 5.5 indicates a positive relationship between the TFA and the intention of farm transfer. These perspectives are then reflected in TFA development. However, as indicated by Table 5.2, on some farms there may be a discrepancy between the succession intention and actual result (transfer or exit).

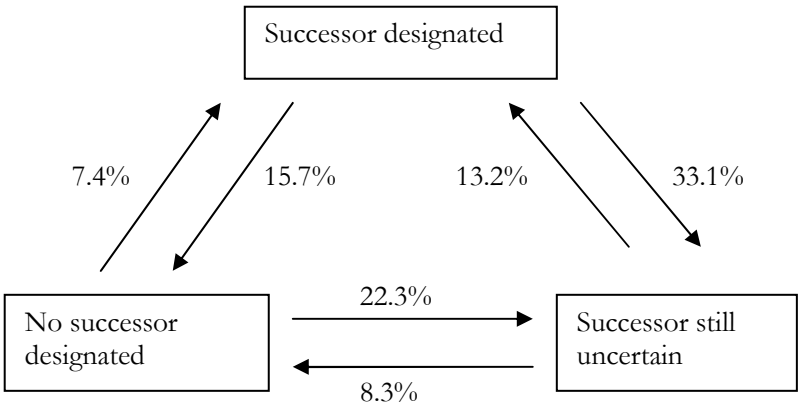

Figure 5.6 Change in succession intentions during the last 10 years before farm transfer or farm exit
Source: own calculations based on FADN database

The discrepancy between intention and behaviour is the highest for medium-sized farms (Table 5.3). Farms with low TFA (TFA below €100,000) have both low intention and behaviour for farm transfer. On large-scale farms (TFA more than €600,000), intention and behaviour are largely focused towards farm transfer. But on medium-sized farms (TFA between €200,000 and €600,000), intention and behaviour do not always coincide, as uncertainty about future viability, the development of the farm, government policies and judgments concerning on-farm and off-farm employment opportunities plays an important roles in the decision about farm transfer, reflecting the uncertain survival possibilities of this type of farm.

Table 5.3 Relationship between TFA, intention and behaviour for farms close to retirement (number of farms)

	TFA below €100,000	TFA between €100,000 and €200,000	TFA between €200,000 and €400,000	TFA between €400,000 and €600,000	TFA more than €600,000	All respondents
No intention, no behaviour	51	44	32	4	8	139
Intention, no behaviour	4	8	11	9	6	38
No intention, behaviour	5	7	11	3	3	29
Intention, behaviour	4	11	33	30	25	103
Total	64	70	87	46	42	309
Discrepancy between intention and behaviour	14%	21%	25%	26%	21%	

Source: own calculations based on FADN database

5.5. The succession effect[9]

5.5.1. Introduction

The succession status of the farm family household is important in describing the way the farm business develops over time (Potter and Lobley 1992, 1996b). The designation of the successor stimulates farm investments as already shown in a descriptive way in section 5.4. In literature this is referred to as 'the succession effect'. Potter and Lobley (1992) suggest that a succession effect may operate throughout a farmer's career, and not only in the retirement stage or when the

[9] The succession effect referred to in literature discusses the succession effect before farm transfer. In this chapter both the existence of a succession effect before and after farm transfer is studied. This entails that we refer in this chapter to the succession effect before farm transfer as the 'pre-succession effect', and to the influence of the succession effect on the post-succession investment decisions as the 'post-succession effect'.

farmer gets older. Even among younger farmers, the expectation of having a successor or not may have a strong impact on the investment decisions. They state that a successor can be seen as a driving force for the PDM and provides an incentive to expand the farm, to invest and to increase the output over longer periods than would be the case if succession is uncertain or has been ruled out (Potter and Lobley 1996a). This 'succession effect' is also suggested by Kimhi *et al.* (1995). They argue that the occurrence of a successor within the family farm might motivate the PDM to invest and raise the current farm size. This link becomes stronger as the event of succession comes closer. A successor provides a constant incentive for expansion and forward planning; while a PDM without a successor has no such interest. But Kimhi *et al.* (1995) did not find empirical evidence for the succession effect. Stiglbauer and Weiss (2000) find even a negative relationship between previous farm growth and the probability of farm succession, indicating a possible aversion of PDMs to make long-term decisions immediately before farm transfer. However these results are based on the use of a physical measure (number of hectares, …) for farm growth. Based on the findings of section 5.4, we argue that TFA is a better indicator to measure whether a pre- or post-succession effect exists.

5.5.2. Methodology

5.5.2.1. Hypotheses

Based on the results of section 5.4 and the literature review in section 5.5.1, the following hypotheses can be stated:

> *5. When a potential successor has been identified, current management will be oriented towards optimising the viability of the farm. When, instead, an exit from farming is envisaged, the value of liquidation becomes important and PDMs start to disinvest*
>
> *9. The timely designation of a farm successor has a positive effect on the TFA development after the start of the new farm life cycle*

Based on the theory of Kimhi *et al.* (1995), hypothesis 5 states that PDMs with a reasonable assured expectation of succession will develop their businesses in a more positive context compared to PDMs who are more pessimistic about succession perspectives. The related first research question tests whether there exists a positive influence of a designated successor on the TFA development. Within this section, this hypothesis will be tested with an econometric model.

However in practice, farm transfer is observed both on farms with a timely designated successor, as on farms where succession was not yet clear or even on farms who stated to not have a successor. Hypothesis 9 therefore states that the timely designation of a farm successor will also have an effect on the TFA development after the start of the new farm life cycle. The related research question

tests whether the succession effect experienced before farm transfer has still an effect on the post-succession TFA development.

5.5.2.2. Data

Different sub samples are used to analyse the pre- and post-succession effect on investment decisions (Table 5.1).

- A first sub sample is used to analyse the pre-succession effect model (Section 5.5). This is the same sub sample as used in section 5.4. The pre-succession effect model focuses on the influence of the designation of a successor on pre-succession investment decisions. As succession perspectives become clear from a certain age of the children, a sub sample of those farmers aged 45 years or more was selected. Our data set contains a 15-year observation period (1989–2003) resulting in an unbalanced panel of 4,366 observations on 713 farms. During the 15-year time period, farm transfer was observed on 197 farms. 351 PDMs had decided not to have a successor. On the remaining farms (165), a successor was not yet designated.
- The post-succession effect model focuses on the relation between the successor designation before farm transfer and the post-succession investment decisions. Therefore a sample of those farms observed in the FADN before and after farm transfer is selected. Only the observations after farm transfer are taken into account, resulting in a total of 816 observations on 115 farms.

Table 5.4 gives descriptive statistics for the farms sampled, based on the 2003 accounting year. The total sample is divided in 3 groups based on the designation status of the successor. The descriptive statistics are given for the sub samples related to the pre- and post-succession effect. The high differences in land use among the farms sampled are explained by the inclusion of landless pig and poultry farms. The standard gross margin (SGM) can be used to overcome the difference in land use, but has limitations at the moment of farm succession, as it does not take the farm value as such into account. SGM and TFA have a correlation of 0.731** in the pre-succession sample and 0.679** in the post-succession sample.

Table 5.4 Descriptive statistics of the sampled Flemish farms (2003)

		Pre-succession effect		Post-succession effect	
		Mean	SD[c]	Mean	SD
Successor designated	N	44		64	
	TFA[a]	632,719.02	314,311.75	477,903.92	266,488.77
	SGM[b]	3,264.55	2,224.48	2,819.84	2,484.47
	Farmer's age	56.52	5.39	35.73	5.60
	Farm size (ha)	53.25	37.01	14.45	27.79
	Labour (full-time equivalent)	1.93	0.64	1.70	0.62
No successor designated	N	86		5	
	TFA[a]	336,925.79	227,596.47	283,556.00	114,099.37
	SGM[b]	1,993.16	1,293.89	1,669.80	597.37
	Farmer's age	52.64	6.32	37.00	9.27
	Farm size (ha)	29.94	19.50	1.08	1.95
	Labour (full-time equivalent)	1.37	0.38	1.39	0.05
Successor still uncertain	N	105		15	
	TFA[a]	471,876.37	294,627.26	496,166.67	257,969.26
	SGM[b]	2,549.98	1,430.09	2,438.60	1,293.74
	Farmer's age	51.88	5.78	34.33	6.21
	Farm size (ha)	38.30	22.50	12.61	17.72
	Labour (full-time equivalent)	1.56	0.44	1.59	0.36

Source: FADN database
[a] TFA: Total Farm Assets (€)
[b] SGM: Standard Gross Margin (€)
[c] SD: Standard Deviation

5.5.2.3. The pre- and post-succession effect models

To test the hypotheses of a positive pre- and post-succession effect, ordinary least square panel data regression models are performed on the Flemish FADN data. We hereby assume – based on Kimhi *et al.* 1995, Potter and Lobley 1996a – that TFAs are influenced by the financial position of the farm (solvency – *SOLV*), age and the

succession effect. Other aspects of the farm management will also have an impact on the TFA development, but these effects are captured as unobserved heterogeneity within the fixed effect panel data models. Therefore we can only include a limit number of independent variables in our model. Section 5.4 showed already that the TFA indicator is independent from the farm type what makes it a more comprehensive and general indicator to be used over different farm types. That analysis also showed that education of the PDM had no influence on the TFA development.

The financial position is reflected in the farm solvency (*SOLV*), calculated as the own capital divided by the total liabilities of the farm (%). It indicates the burden of debt by the farm, i.e. possible financial difficulties in the future. A high solvency involves that most of the farm property is owned by the PDM and loans from the bank are limited. The solvency increases over the farm life cycle as the PDM builds up his own capital (Figure 5.7).

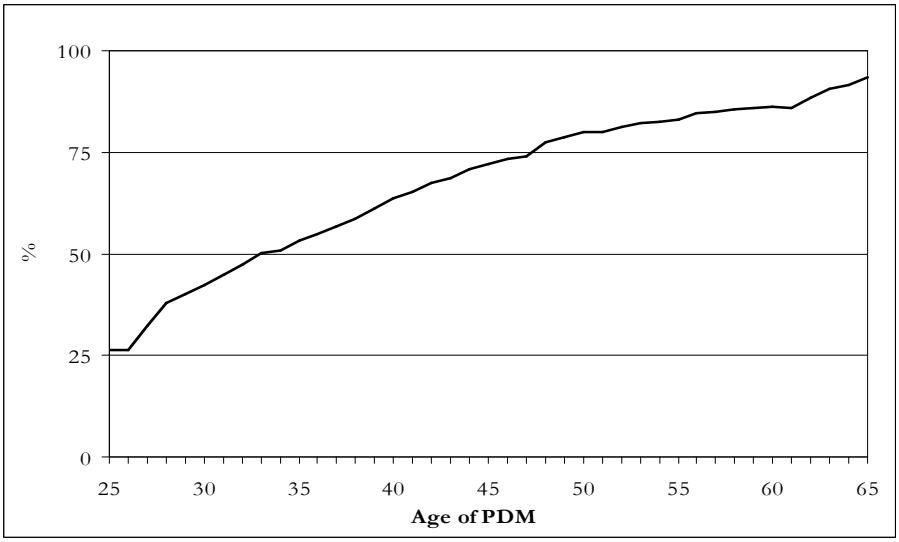

Figure 5.7 Average solvency development on sampled Flemish family farms

Source: own calculations based on FADN database

In our models [1] and [2], the lagged variable is used to overcome endogeneity problems: $SOLV_{t-1\,i}$ is not influenced by $TFA_{t\,i}$.

5.5.2.3.1. Pre-succession effect model

A pre-succession effect means that depending on the designation or non-designation of a successor, different patterns of farm development are followed. The designation or non-designation is based on the indication of the PDM that he has designated a

successor, that succession is not yet certain, or that no successor is designated. This indication is made within the FADN database. In order to test the pre-succession effect, two dummies are added to the model. The dummy D_{succ} represents the effect of the designation of a successor. The dummy D_{nysucc} indicates that succession is uncertain (i.e. not yet successor designated). So the base category is a farm that states not having a successor. Lagged variables are used to overcome the problem of endogeneity. $TFA_{t\,i}$ has no influence on the dummies $D_{succ\ t-1\ i}$ and $D_{nysucc\ t-1\ i}$. The time effect is included by the variable AGE, that represents the age of the PDM. The year-specific effects are not significant and therefore not restrained in the model.

Model [1] indicates the pre-succession OLS fixed effect panel data regression model. The model includes group dummy variables that capture the unobserved heterogeneity of each group, in this case, each farm.

$$TFA_{t\,i} = \alpha_1 + \beta_1\, SOLV_{t-1\,i} + \beta_2\, D_{succ\ t-1\ i} + \beta_3\, D_{nysucc\ t-1\ i} + \beta_4\, AGE + \varepsilon_{it} \qquad [1]$$

5.5.2.3.2. Post-succession effect model

Within the post-succession effect model, dummy variables cannot be used as they are regarded as a fixed parameter in the fixed effect panel data regression model. Each dummy variable of model [1] is replaced by a succession related variable that indicates the number of years after farm succession in model [2]. If a successor was timely designated before farm transfer (more than two years before farm transfer), i.e. if the D_{succ} has the value 1 over a longer time period, than the variable $Y_{succ\ t\ i}$ indicates the number of years after farm succession. If there was no timely designation of a successor, the variable $Y_{succ\ t\ i}$ has the value 0. The variables $Y_{nysucc\ t\ i}$ and $Y_{nosucc\ t\ i}$ are composed in the same way, based on the value of D_{nysucc} resp. D_{nosucc}.

Model [2] indicates the post-succession OLS fixed effect panel data regression model. The model includes group dummy variables that capture the unobserved heterogeneity of each group, in this case, each farm. The year-specific effects are not significant and therefore not restrained in the model.

$$TFA_{t\,i} = \alpha_2 + \beta_5\, SOLV_{t-1\,i} + \beta_6\, Y_{succ\ t\ i} + \beta_7\, Y_{nysucc\ t\ i} + \beta_8\, Y_{nosucc\ t\ i} + \varepsilon_{it} \qquad [2]$$

5.5.3. Empirical results

The empirical results test the hypotheses of a pre- and post-succession effect. The pre-succession effect reflects the influence of the designation of a successor on the farm investments. The post-succession effect reveals the influence of the designation of a successor before farm transfer on the post-succession investment decisions.

Due to the lack of observations for all farms over the 15-year time period, all econometric analyses were performed on unbalanced panels. The Hausman-test (Arellano 2003) indicates fixed effect models and not random effect models. This is also confirmed by the t-statistics of all group dummy variables that are significant. The use of the group dummy variables within the fixed effect models corrects for the unobserved heterogeneity (Arellano 2003). The observations over time of one individual farm are captured within a specific group. The group dummy variables cover the farm specific characteristics that are not included in the independent variables of the model (e.g. soil type, farm environment, ...) and enable us to estimate general models related to the pre- and post-succession effect, not depending on farm type, farm size etc.

Table 5.5 provides the descriptive statistics, measures of central tendency, measures of dispersion, and number of observations of independent variables of the two sub samples used in the analyses.

Table 5.5 Descriptive statistics of the sub samples of pre- and post-succession effect

	Variable	Mean	SD	Minimum	Maximum	Cases
Pre-succession effect	*TFA*	349,496	242,369	2826	1,856,505	4357
	SOLV	81.27	16.76	2.33	100.00	3646
	D_{succ}	0.21	0.40	0.00	1.00	4357
	D_{nysucc}	0.39	0.49	0.00	1.00	4357
	AGE	53.35	5.70	45.00	90.00	4357
Post-succession effect	*TFA*	443,606	230,560	38,868	1,477,054	816
	SOLV	42.82	21.07	0.44	100.00	708
	Y_{succ}	4.31	3.81	0.00	14.00	816
	Y_{nysucc}	0.85	2.43	0.00	14.00	816
	Y_{nosucc}	0.34	1.54	0.00	13.00	816

Source: own calculations based on FADN database

The solvency (*SOLV*) of the farms after farm transfer (average 43%) is significant lower than the solvency of the farms close to farm transfer (average 81%). The solvency is built up during the farm life cycle (Figure 5.7). Due to this high average solvency rate at the end of the farm life cycle, new investments will decrease the solvency rate. Only a moderate correlation between the variables related to succession perspectives exists (Table 5.6, Table 5.7). Within these OLS fixed effect

panel data regression models, no problems of multicolinearity, heteroscedasticity or endogeneity are observed[10].

Table 5.6 Correlation matrix of the independent variables of the pre-succession effect model

	SOLV	D_{succ}	D_{nysucc}	*AGE*	*TFA*
SOLV	1.000				
D_{succ}	-0.121	1.000			
D_{nysucc}	-0.003	-0.529**	1.000		
AGE	0.266**	0.176*	-0.178*	1.000	
TFA	-0.210**	0.272**	0.015	-0.036	1.000

Source: own calculations based on FADN database
**: significant at 0.01 level
*: significant at 0.05 level

Table 5.7 Correlation matrix of the independent variables of the post-succession effect model

	SOLV	*Ysucc*	*Ynysucc*	*Ynosucc*	*TFA*
SOLV	1.000				
Y_{succ}	0.098	1.000			
Y_{nysucc}	0.182*	-0.464**	1.000		
Y_{nosucc}	0.050	-0.291**	-0.085	1.000	
TFA	0.145*	0.070	0.180*	-0.092	1.000

Source: own calculations based on FADN database
**: significant at 0.01 level
*: significant at 0.05 level

5.5.3.1. Pre-succession effect

Table 5.8 indicates that all four independent variables are statistically significant at the 0.05 alpha level. The independent variables of the model account for 14 per cent of the variance in the dependent variable and group effects account for 91 per cent

[10] No problems related to multicolinearity are observed as the correlations in Table 5.6 and Table 5.7 are relatively limited. The graphical interpretation of squared residuals in relation with pre- and post succession effect indicate that there is no heteroscedasticity. The Hausman test is used to test the endogeneity

of variance. This results in an overall score of 93 per cent of the variance in the dependent variable.

TFA is negatively correlated with solvency. If the solvency increases with one per cent, ceteris paribus, the TFA decreases with €2,862. Or put differently, at the end of the farm life cycle, PDMs developing their farm do this partially with external sources, such as bank loans, or invest their own capital to develop the farm. Farm investments are vital to remain competitive in the contemporary farm environment.

The influence of the age of the PDM on the TFA indicates an increase of the TFA of €8,937 if the age of the farmer increases one year, ceteris paribus. During the farm life cycle, the TFA increases as the PDM gets older: a continuous development of the family farm is necessary to remain a competitive and viable farm.

Table 5.8 Parameters of the OLS fixed effect panel data regression of the pre-succession effect model

Variable	Coefficient (β)	St. Error	β/st.er.	P[|Z|]>z
SOLV	-2,862.17	164.48	-17.401	0.000
AGE	8,936.85	387.88	23.040	0.000
D_{succ}	37,762.54	6,173.10	6.117	0.000
D_{nysucc}	13,568.84	5,548.68	2.445	0.015
Adjusted R^2	0.93			
Model test	F(625, 3020)	= 80.54		0.000

The succession effect is reflected by the positive sign of the coefficients of the dummy variables related to the designation of a successor. A certainty about farm succession is increasing the TFA with on average €37,763, compared to the TFA of a farm without designated successor, ceteris paribus. The effect of not yet having certainty about a successor is reflected in an average increase of TFA by €13,569 compared with the TFA of a farm without designated successor. This result confirms a pre-succession effect of both the designation of a successor and the uncertainty about designation of a successor, although the latter to a smaller extent. A timely designated successor stimulates the PDM to make extra farm investments (Figure 5.8). Uncertainty about farm succession stimulates limited farm investments.

Making use of the Total Farm Assets (TFA) as an indicator of farm development, we are able to confirm econometrically the pre-succession effect based on empirical evidence for Flanders. A first conclusion is that PDMs take into account the possibilities of farm transfer within the investment decisions. The designation of a farm successor has a more pronounced influence on the investment decisions than in case the succession is still uncertain, but both the designation of a successor and the

uncertainty about farm succession, increases the TFA statistically significant compared to a non designation of a farm successor.

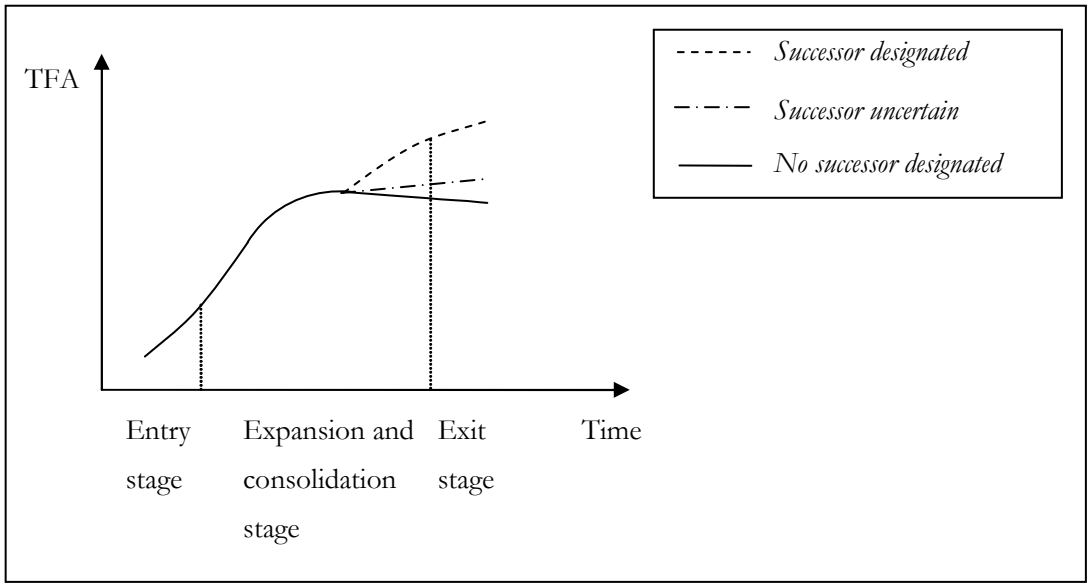

Figure 5.8 Conceptual model of the pre-succession effect

Source: own compilation

5.5.3.2. Post-succession effect

Table 5.9 gives the parameters of the post-succession effect model. Three independent variables are statistically significant at the 0.05 alpha level (*SOLV*, Y_{succ}, Y_{nysucc}). The variable Y_{nosucc} is not significant at the 5 per cent level. The independent variables of the model account for 7 per cent of the variance in the dependent variable and group effects (farm specific characteristics) account for 85 per cent of the variance. This results in an overall score of 87 per cent of the variance in the dependent variable.

The pre- and post-succession models differ related to the farm solvency (*SOLV*). At the end of the farm life cycle, the solvency is at a relatively high level as it is build up during the farm life cycle (Figure 5.7). At the start of a new farm life cycle, PDMs start with a high debt ratio and if farm management enables an increase of the farm solvency, this is reflected in an increase of the TFA. An increase in the solvency by one per cent is reflected in an increase of TFA by €976, ceteris paribus. This may indicate that young PDMs who have more own equity are able to enhance farm growth.

Table 5.9 Parameters of the OLS fixed effect panel data regression of the post-succession effect model

Variable	Coefficient (β)	St. Error	β/st.er.	P[|Z|]>z
SOLV	976.25	329.66	2.961	0.003
Y_{succ}	13,732.29	1,481.47	9.269	0.000
Y_{nysucc}	14,763.71	2,839.57	5.199	0.000
Y_{nosucc}	7,150.71	4,973.71	1.438	0.151
Adjusted R^2	0.87			
Model test	F(107, 600)	= 43.96		0.000

Within the context of a post-succession effect, the variables related to the timely designation of a successor have also a significant effect on the TFA. In these cases where the successor was timely designated before farm transfer or that the succession was not yet certain, the TFA increases each year statistically significant with on average €13,732 resp. €14,763, with all other parameters constant. Even if the PDM has not yet designated a farm successor, the potential farm successor can prepare (mentally) for possible farm succession and at the start of the new farm life cycle, he experiences the same stimulus as his designated colleague. On farms where the successor was only designated at the moment of farm transfer, we observe no statistically significant increase of the TFA. Hence, a conclusion is that the timely designation of a successor or a possibility about successor designation at the end of the previous farm life cycle gives also an extra stimulus to the development of the farm at the start of the new farm life cycle. In other words, our results also confirm the existence of a post-succession effect.

These results also mean that at the start of the farm life cycle, the age of the successor has no direct influence on the TFA, which is in contrast with the age-effect at the end of the farm life cycle. Moreover, the annual rate of increase at the start of a farm life cycle (Y_{succ}, Y_{nysucc}) is higher than the rate of increase at the end of the previous farm life cycle (*AGE*). This indicates that young successors are more dynamic and invest more than the PDMs they succeed. These results confirm that younger farmers are indeed more innovative and competitive as suggested by Williams and Farrington (2006) and thus that well planned succession cycles are important for keeping agriculture competitive.

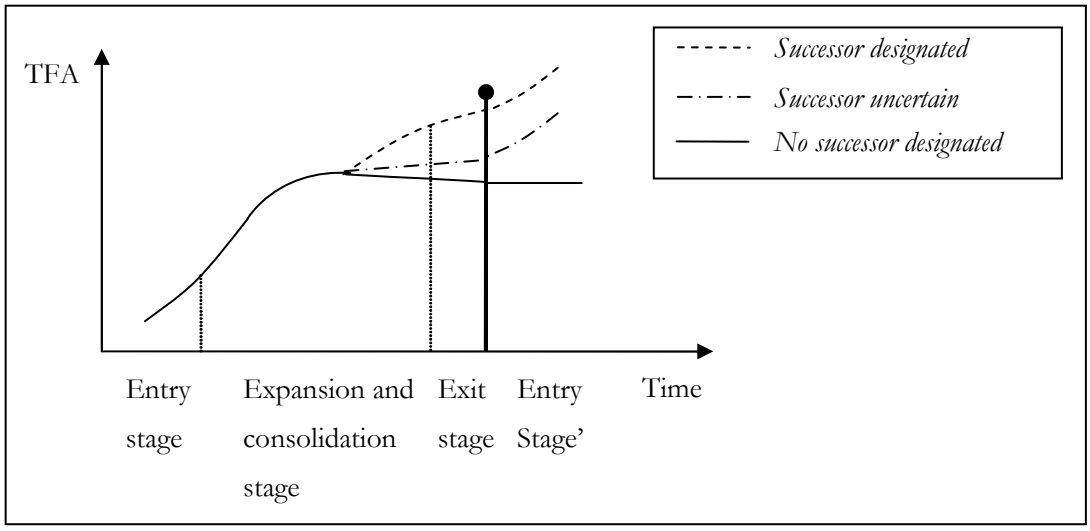

Figure 5.9 Conceptual model of the post-succession effect

Source: own compilation

Combining the pre- and post-succession effect, it becomes clear that farms with a timely designated successor have both a pre- and post-succession effect that gives them a high competitive advantage in terms of TFA compared to other groups (Figure 5.9). The TFA development is significantly higher and if these effects appear in subsequent farm life cycles, they build up a considerable advantage in terms of TFA compared to farms where succession perspectives are less clear.

On farms where the successor is not yet designated before farm transfer, a smaller pre-succession effect is observed, and they also have an extra stimulus to further develop the farm after farm transfer. This stimulus has on average the same extent as the group with a designated successor. However this also means that they have difficulties to catch up the pre-succession delay. The limited pre-succession effect gives them in other words a disadvantage that still plays a role in the new farm life cycle.

The last group consists of farms that indicated not having a designated successor, but who succeeded anyway in transferring the farm. This lack of future farm vision is reflected in the lack of a pre-succession effect, but also after farm transfer no post-succession effect is observed. In most cases, it means that these farms lack a real economic perspective as also the successor only decides at the latest moment to take over the farm, mainly to preserve the family patrimony. The lack of a well-considered future vision creates a gap with the other groups of farms that is difficult to catch up.

5.6. Conclusions

Farm transfer is of major importance for the continuation of family farms. The early identification of farms with a high probability of farm transfer may therefore be an important tool for agricultural policies designed to stimulate farm continuation.

The first part of this chapter has validated the potential of TFA as indicator for discriminating between farms with a high and low succession potential. Taking into account asset fixity theory and transaction costs theory, TFA appears to be a theoretically sound indicator to reveal the relationship between the long-term orientation of the farm and its current management, although it might be questioned for extra large farms. Our empirical findings show that TFA is indeed significantly higher on farms with a potential successor; in other words, a positive relationship between a farmer's early awareness of whether a successor is available and the management of the farm exists. Our results show that succession intentions start to influence the farm investment decision about 10 years before the farm is actually transferred. In this period farms with a designated successor have a higher increase in TFA than farms still uncertain about succession. On farms without succession perspectives we even observed zero growth, and in those owned by PDMs aged from 57 years, we observe even a negative development in TFA. The results related to the discrepancy between intention and succession confirm that the discrepancy between the intended succession and the actual succession is smaller on farms with a higher TFA. On farms with a low TFA, the intention is low, and this is reflected in a low succession rate.

The second part of the chapter is based on the succession effect suggested by Kimhi *et al.* (1995). Making use of the Total Farm Assets (TFA) as an indicator of farm development, we were able to confirm econometrically the pre- and post-succession effect, at least for the farms represented in the FADN set of Flanders. Our results clearly confirm the existence of a pre-succession effect. From an age of 49 years, PDMs take succession perspectives into account in the farm development. The age of the PDM and the way the farm is financed influence the growth rate of TFAs, but also the designation of a successor is a positive stimulus for farm investments. The TFA will increase if own capital or external financial sources can support the farm expansion. A certainty or possibility of farm succession stimulates farm development by the PDM, confirming hypothesis 5.

The post-succession effect reflects the consequence of the timely designation of a successor before farm transfer on the post-succession investments. Both farms where the successor was timely designated or uncertain do have higher growth rates of TFA after farm transfer than farms that were still transferred even if till the last year before transfer no successor was designated. These results show that the timely preparation of the successor is also a decisive factor. Even if uncertain, successors who envisage succession are better prepared than those who only decide at the last moment. The last group will find it hard to catch up with the other groups of PDMs

regarding TFA. But also the successors who were not yet designated before farm transfer can on average not bring their TFA to the same level as the groups with timely designated successors. We confirm that the timely designation of a farm successor has a positive effect on the TFA development after the start of the new farm life cycle. This means that the future farm vision of a PDM has consequences for the current and next farm life cycle(s).

From both science and policy perspectives the empirical models confirm that, in their farm investment decisions, PDMs anticipate to the presence or absence of a successor. Their appraisal of the farm succession has consequences for the own farm life cycle, but also for the next farm life cycle(s). Therefore, the following recommendations related to further research and policies are made:

- Further exploration of the potentials of TFA as an indicator is an important research area. Research may, among other things, concentrate on the refinement of the indicator for more specific policy issues such as investment specific support actions. Taking specific sub groups into account, the inclusion of farm specific variables can reduce the unobserved heterogeneity within specific farm types.
- As the importance of TFA in the context of farm transfer is proven, TFA should be included as an indicator related to farm succession both in the internal management of the farm, as in the farm succession extension. Within accounting, more importance should be given at the elaboration of the TFA. When there are general rules for calculation of the TFA, which can be used over the different accounting systems, the TFA can also be used in policy recommendations.
- At present, policies focus at the start of the farm business and try to stimulate and help the successors during and after farm transfer, but our results indicate that the end of the farm life cycle is also of major importance for the future viability of the farm. At the end of the farm life cycle, governmental policies and extension services can highlight the importance of a timely decision related to farm succession and the consequences on the farm development, in order to stimulate the pre-succession effect.
- TFA development can be used in the consolidation stage of the farm life cycle to indicate what kind of measures are most effective for the future of the farm and the farm owner. If their TFA indicates a high probability of farm transfer, farms can be directed to measures improving the transfer (e.g. vocational training and information actions). However, if TFA indicates a low probability of farm transfer, more effort can be made to guide the farm in the exit process. Targeting PDMs in an earlier stage can thus improve the effectiveness of such policy measures, which over the long run can also enhance the structure of the farm sector and its competitiveness.

Chapter 6 – Financing of farm transfer and influence on farm practice

6.1. Introduction

Within the social and economic aspects of the succession cycle (Chapter 4 and Chapter 5), the importance of the financing of the farm transfer is already been highlighted. It is an aspect that plays an important role during the whole farm succession cycle. This chapter puts the financing of farm transfer in the centre of attention (Figure 6.1) and looks at the influences on farm transfer (e.g. the influence on transfer strategies, the succession ladder and labour availability), and changes in farm practice after farm transfer.

The main objective of this chapter is to give an overview of the different ways of financing farm transfer from a theoretical point of view, to analyse the influencing factors of the external financing leap, and to analyse the consequences related to the farm management.

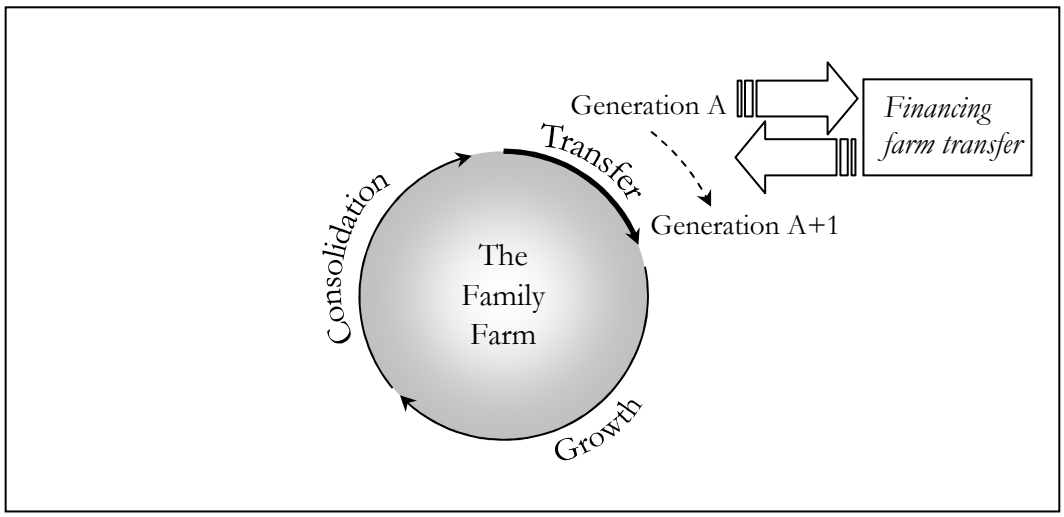

Figure 6.1 Economic aspects related to financing, within the farm succession cycle model

Source: own compilation

6.2. Financing of farm transfer

6.2.1. Farm capital

As stated in the definition of a family farm (Section 2.2), a considerable part of the capital has to be borne by the farm and, therefore, by the farm family as long as the

farm production is organized by farm families (Schmitt 1991). Although 'small' and 'family' are not the same, small farmer's best prospects for survival were felt to rest on their ability to capitalise and expand the scale of their operations (Gasson *et al.* 1988). As already stated in section 2.4.1.1, PDMs have a greater flexibility than other structures to divide the net returns of the family farm among (1) expansion of production, (2) family consumption or (3) investment in production factors, allowing them to compete successfully with industrial forms of farming focussed on returning a profit. This is reflected in the TFA increase over time (Chapter 5). The capitalisation within the family farm is possible when a part of the net returns can be kept aside for the future. The capitalisation can take place during all stages of the farm life cycle and is reflected in the decline or survival of the family farm.

Considering decline first, there are many farms that cannot reproduce on an enlarged scale and that cannot keep up with the development of modern agriculture. They lag behind and survive only for a short time through:

- Accepting a small income and/or
- Supplementing the household income with income from wage labour or insurance and/or
- Consuming their own 'capital'

These farms do not have a long-term perspective and most often a combination of these methods is used. Sooner or later the family will leave the business, or production will be reduced to an insignificant level.

On the other hand, the survivors are able to reproduce their farms on an enlarged scale. If they cannot manage it on their own, they take loans from private or state banks. They have to enlarge production to meet the new expenditures. A good management enables them to accumulate and enlarge their own capital (Almås 1984). These tendencies are confirmed by the results of Chapter 5. Within the framework of a limited budget, the farmer has been able to improve returns to farming by investments in the efficient application of technology rather than by acquiring more land (Swinnen *et al.* 1993). These economies of scale in European agriculture are reflected in the increase of the average economic size unit, the increase in average utilised agricultural area per farm, in combination with a limited increase of the average labour input per farm (Section 2.3.1). The increased capitalisation of the family farm, related to the increased scale of the farms, entails that especially at the moment of farm transfer high amounts of capital are needed to continue the family farm.

6.2.2. Sources of financing

At the moment of the arrangement of the family farm take-over price, the different involved parties have to negotiate taking into account the basic assumption that the financing of the farm transfer by the successor has to be feasible (Van der Meersche and De Marez 1997). Due to the Belgian legislation stating that 'the inheritance is divided in equal shares, but the preservation of the unity of the holding is primordial', the capital requirements of the successor are considerable and financial arrangements have to be made with external institutions or family members. Within these arrangements, the unpaid labour provided by the successor, has to be taken into account: the principle of the postponed wages in agriculture states that a successor aged 18 or more, who has normally worked at least 5 years on the farm, should be remunerated for his labour (Belgisch Staatsblad 1967).

6.2.2.1. Family's equity

The family's equity determines the resilience to adverse farming conditions. It is decisive for the acquisition of external sources of financing and has the advantage that it is unconditional available for the family farm without paid interest rate (Elhorst 1987). Before farm transfer, successor's equity is built through external wages or cooperation in the family farm, but it is not sufficient to finance farm transfer. To increase owner's equity after farm transfer, family members, mostly the parents, provide financial support by means of gifts, family loans with low interest rates (Landbouw-Economisch Instituut and Rabobank Nederland 1987) or through a gradual farm transfer. All these aspects are covered by the family's equity.

6.2.2.2. Bank loans

Farm successors make also use of bank loans to cover the farm transfer and new investments (Landbouw-Economisch Instituut and Rabobank Nederland 1987). These external sources of financing have a temporary character. The created debt makes sense if the returns on investment exceed the interest rate being charged for the use of others' money, but the higher risk has also to be taken into account (Hughes *et al.* 1986). Therefore, financial institutions base the allocation of agricultural loans, such as for example loans related to farm transfer, on an evaluation of risk (Cops 2008). The risk level is reflected in the probability of default and the liquidation value of assets, and has an effect on the interest rate.

The evaluation criteria are related to the applicant, the farm results and the financial position of the farm. The relationship between these factors determines the allocation of the loans (Landbouw-Economisch Instituut and Rabobank Nederland 1987, Cops 2008):

- Applicant:
  - Assessment of the qualifications of the PDM, based on the origin, job competences, entrepreneurship and commitment.
  - The relation between the financial institution and the PDM over time.
- The farm results:
  - The operational safety (e.g. land ownership, production rights, …), exploitation (e.g. kind of product, quality, modernity, …), and future plans of the farm are taken into account. The farm has to meet all necessary environmental regulations.
  - An evaluation of the sector based on e.g. the cyclical sensitivity, (inter)national competition and prospects.
  - The objectives and motivations of the project, in casu the farm transfer.
- Financial position:
  - The relation between the amount of owner's equity and bank loans is an important indicator. Owner's equity is a source of stability, in order to overcome periods of financial difficulties. A higher solvency decreases the risk of the bank. However in case of farm transfer, the owner's equity of the successor is limited.
  - In case of a low solvency, financial institutions require a high profitability of the farm, in order to increase the solvency and decrease the risk. The farm profitability is based on the estimation of the pay back capacity of the farm, taken into account the average yearly cash flow, the credits and the amount of money necessary to live.
  - A third indicator of the financial position is the liquidity. Liquidity indicates the extent to which financial means are available to satisfy short run needs.
  - Finally, the guarantees in case of bankruptcy determine the financial position of the farm.

6.2.2.3. Government support

The Flemish government provides special support for farm transfer. This support is part of the support measures of the Flemish Agricultural Investment Fund (VLIF, Vlaams Landbouwinvesteringsfonds) in the framework of the European regulation 1257/99. Within this regulation, each country decides on the specific support measures towards young farmers: e.g. the Flemish government provides both

establishment and investment support, where the Dutch government offers only limited investment support.

If Flemish PDMs meet the regulations of the VLIF, they can apply for establishment support, investment support and guarantee support (VLIF 2007).

The general regulations for all these subsidies are related to:

- The occupation status: the PDM has to work more than 50% on the farm, and the farm revenues have to be minimum 35% of the total revenues
- The PDM has to be a competent farmer, measured in terms of having followed agricultural education, or general education supplemented with specific courses
- The farm has to be economic viable. The labour income per full time labour equivalent has to be more than the reference income that is yearly determined (e.g. in 2005, this was €23,000 per full time labour equivalent)
- The farm has to have all necessary permits related to environment, water, buildings etc.
- The PDM has to do farm economic accounting

On top of the general regulations, the extra conditions to receive the establishment support are:

- The PDM has to be younger than 40 years at the moment of the application
- Only the establishment costs at the moment of farm transfer related to the following items are accepted:
    - Taking-over of moveable property of the farm related to animals, equipment, material, plantations, stocks, field crops and field remaining
    - The purchase of animals, materials, stocks aimed at completing the moveable property of the farm
    - Taking-over of shares at the moment that the successor is established as manager of an agricultural professional partnership

Establishment support is reserved for the transfer of the farm and the moveable property of the farm. The objective of the Flemish government is to encourage young people to establish a farm as independent profession. Young entrepreneurs are in general more open to realise the necessary structural improvements in the sector. The support measures are open to all types of agricultural firms regardless of the kind of activity or production method. Some general rules are applied to grant the establishment support. On the first bracket of €50,000, an establishment subsidy of maximum 50 per cent or €25,000 is granted, spread over the two years following on the year of farm transfer. This subsidy is co financed by the European Union. On

the remaining establishment costs, with a maximum of €100,000, an interest subsidy of maximum 4 per cent during 10 years is awarded. During this period, the PDM has maximum 1 year of exemption of capital reimbursement. This interest subsidy is also co-financed by the European Union. Establishment costs higher than €150,000 that are financed by a loan (with a maximum of €250,000), can get an interest subsidy of maximum 4 per cent during 10 years, during which an exemption of capital reimbursement is possible during maximum 1 year. The Flemish government finances this interest subsidy.

After farm transfer, PDMs can still apply for investment support. This funding aims at encouraging PDMs to adapt their farm structures to the rapidly evolving and changing circumstances in which the farms are active. New farm investments are necessary to ensure the farm viability due to developments in the field of environment, animal welfare, technology, energy, commercialisation and distribution, the liberalisation of the market, reorientation of EU policy etc.

The investment support wants to encourage adaptations of the farm structure related to:

- Decrease of the production costs
- Improvement and switch of production
- Increase of quality
- Improvement of environment, hygienic circumstances and animal welfare
- Stimulation of farm diversification

The intensity of support ranges from 10 to 30 per cent. It depends on the extent to which government wants to stimulate the investment and takes into account the economic life span of the investment. Investment support can be granted both as interest subsidy or capital subsidy depending on the way of financing. Supplementary to the own guarantees, during a 15-year period, a community guarantee can be attributed for an amount of maximum 80 per cent of the subsidized credit (VLIF 2007).

Figure 6.2 indicates the total estimated costs within Flemish agriculture submitted for establishment and investment support by VLIF over a 14 year time period. The regression in 2000 can be explained by the dioxin crisis that affected the Flemish agricultural sector in 1999. The total amount of investments is on average a factor 10 higher than the total amount of establishment costs and shows an increasing trend. At Flemish level, relatively more farm investments are made, compared to the early nineties, but the relative amount per application remains more or less constant (Figure 6.3). There are more applications for farm investments, while the number of farms decreases, indicating an increasing trend to invest in order to stay competitive (one farm can submit several applications). After the dioxin crisis, the estimated cost submitted for establishment support stabilized in the period 2002-2005 (on average

200 applications per year). The high increase during the last years (both in number of applications and estimated total cost) can be explained by the changes in application procedure, a higher amount of establishment support applications to anticipate an expected decrease in establishment subsidies, the increased importance of business entities with separate legal personality, the increased amount of farms where both partners (man and woman) are farm manager and each submit separately an application for establishment support, and last but not least an increased faith in the future of agriculture (VLIF 2007).

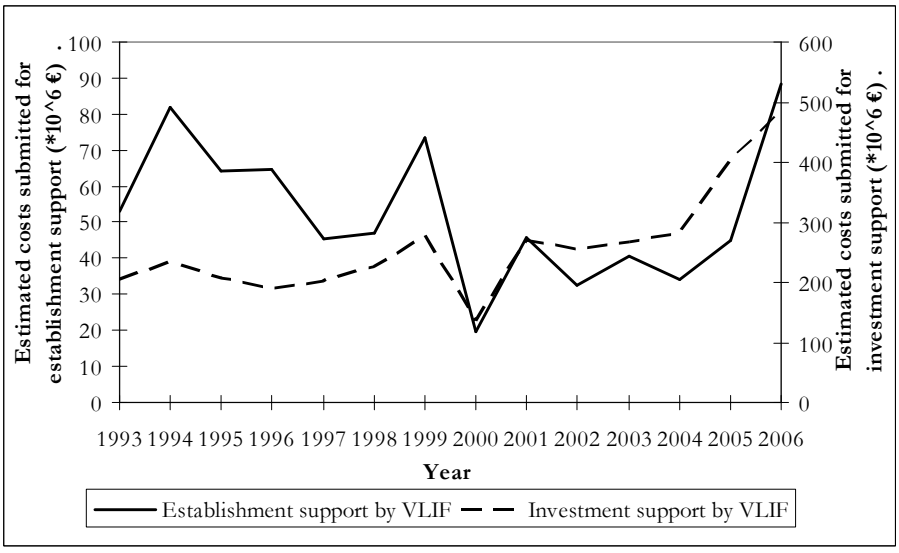

Figure 6.2 Total estimated cost submitted for establishment and investment support in Flanders

Source: VLIF 2007

For the establishment costs, we can see that the average estimated cost per submission is increasing over time (Figure 6.3). Stakeholders indicate that the estimated costs indicated in the VLIF-statistics are closely related to the VLIF regulations: often the estimated costs of farm transfer are estimated maximum €250,000, because this is the upper limit for support. The farm value above this limit will be transferred in one of the following stages of the farm transfer (gradual farm transfer) (Section 6.4.3.1).

Figure 6.2 and Figure 6.3 give an overview of the total estimated cost submitted for establishment support and investment support. Delaender (2008) states that 95 per cent of these applications are approved, but not all applications are approved for the total submitted amount. Table 6.1 indicates that 92 per cent of the establishment support submissions is related to the agricultural sector and 8 per cent to the horticultural sector. The average cost per approved application is €168,293 and on

average 30 per cent of these costs are financed by means of establishment subsidies (€50,564) (Table 6.2).

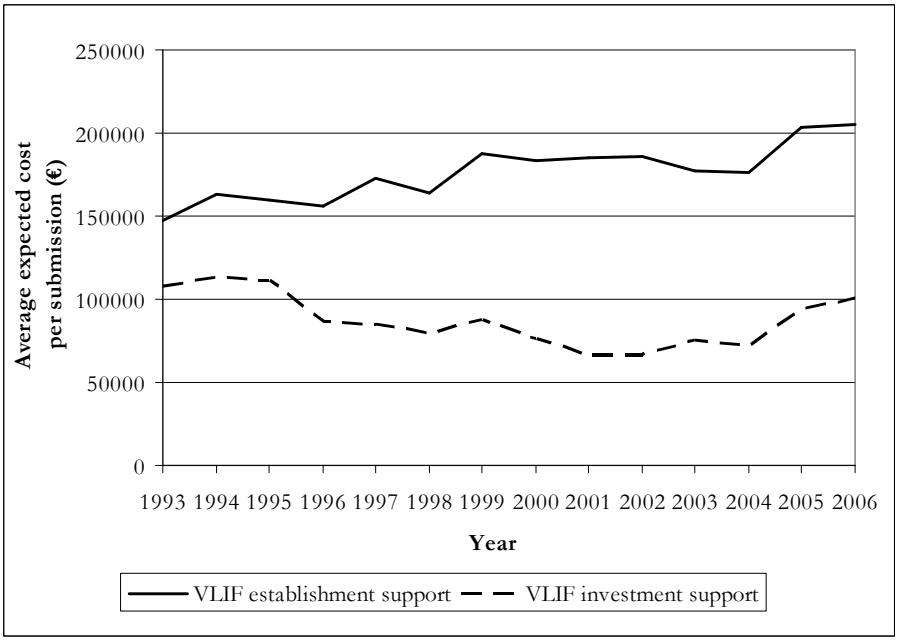

Figure 6.3 Average amount of VLIF establishment and investment support per submission
Source: VLIF 2007

Table 6.1 Overview of submission for establishment support in agriculture and horticulture (2006)

	Agriculture	Horticulture	Total
Total estimated cost submitted for establishment support (€)	81,271,594	6,929,964	88,201,557
Total number of applications for establishment support	378	51	429
Total estimated cost submitted for investment support (€)	306,751,276	160,635,341	467,386,617
Total number of applications for investment support	3,277	1,515	4,792

Source: VLIF 2007

As not only successors can apply for VLIF investment support, the total number of applications and related total cost for investment subsidies in 2006 are much higher compared to the establishment subsidies (Table 6.1). With 34 per cent of the total estimated cost submitted, the horticultural sector is much more represented within the submission of investment support than in the submission of establishment

support. The average cost per approved application is €71,706 of which on average 25 per cent (€18,168) is financed by investment subsidies (Table 6.3).

Table 6.2 Overview of approved applications related to VLIF establishment support (2006)

Total approved cost for establishment support (€)	Agriculture	32,010,810
	Horticulture	2,321,003
	Total	34,331,813
Total number of approved applications		204
Average cost per approved application for establishment support (€)		168,293
Total amount of attribute establishment support (€)		10,315,092
of which Flemish support (€)		6,021,000
of which European support (EOGFL) (€)		4,294,092
Percentage attributed establishment support related to total approved cost		30%

Source: VLIF 2007

Table 6.3 Overview of approved applications related to VLIF investment support (2006)

Total approved cost for investment support (€)	Agriculture	141,399,446
	Horticulture	71,207,704
	Total	212,607,150
Total number of approved applications		2,965
Average cost per approved application for investment support (€)		71,706
Total amount of attribute investment support (€)		53,869,002
of which Flemish support (€)		40,401,752
of which European support (EOGFL) (€)		13,467,251
Percentage attributed investment support related to total approved cost		25%

Source: VLIF 2007

6.2.2.4. Importance of the different sources of farm transfer financing

Figure 6.4 indicates that at the end of the farm life cycle the family's equity is relative high, compared to the bank loans. At the moment of farm transfer, the loans of the bank increase to an average amount of €250,000 –the maximum amount for VLIF support, but PDMs are free to apply for higher loans – while the family's equity

drops. The first years after farm transfer, the successor establishes an increase of the TFA, by increasing the family's equity. This increase is possible because of higher farm results, lower family expenses and more profitable conditions for loans of young farm families, compared to the older farm families (Landbouw-Economisch Instituut and Rabobank Nederland 1987). The loans will decrease after a period of 6, 10 to 15 years, depending on the redemption period of the loans, but at that time, new investments can further increase the competitiveness of the farm, or the successor has to compensate the family for the financial help at the moment of farm transfer.

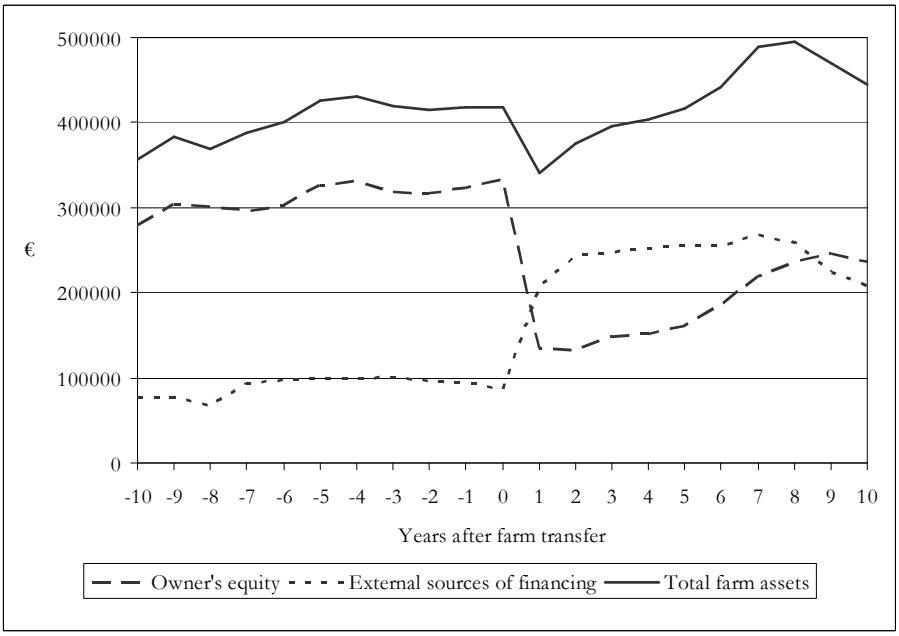

Figure 6.4 Financial situation of average farm close before and after farm transfer

Source: own calculations based on Flemish FADN database

When differentiating on farm size, based on TFA, we can fine-tune the results of Figure 6.4. As expected, at the moment of farm transfer, the bank loans increase to a higher extent for farms with high TFA compared to the groups with lower TFA (Figure 6.5). But from a relative point of view (Figure 6.6), the bank loans of the farms with TFA more than €500,000, cover a significant lower percentage of the TFA after farm transfer, compared to the relative smaller farms. The explanation is based on the fact that the VLIF-support takes maximum €250,000 into account for capital and rent subsidies. Farms with TFA of more than €500,000 envisage high farm transfer costs, but on average the family will carry a relative higher percentage of financing: gradual farm transfer can lower the external burden of debt. For farms with a TFA below €200,000, it is more favourable to have a relative high loan from

the bank, as the VLIF support does not cover only a capital subsidy, but also the interest subsidy up to an amount of €250,000 (Section 6.2.2.3).

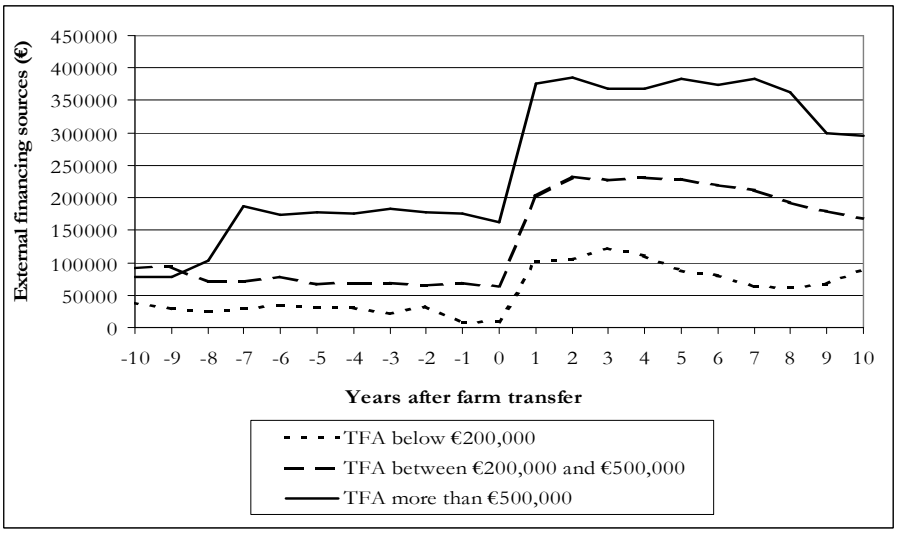

Figure 6.5 Absolute amount of external financing of the family farm differentiated by TFA

Source: own calculations based on Flemish FADN database

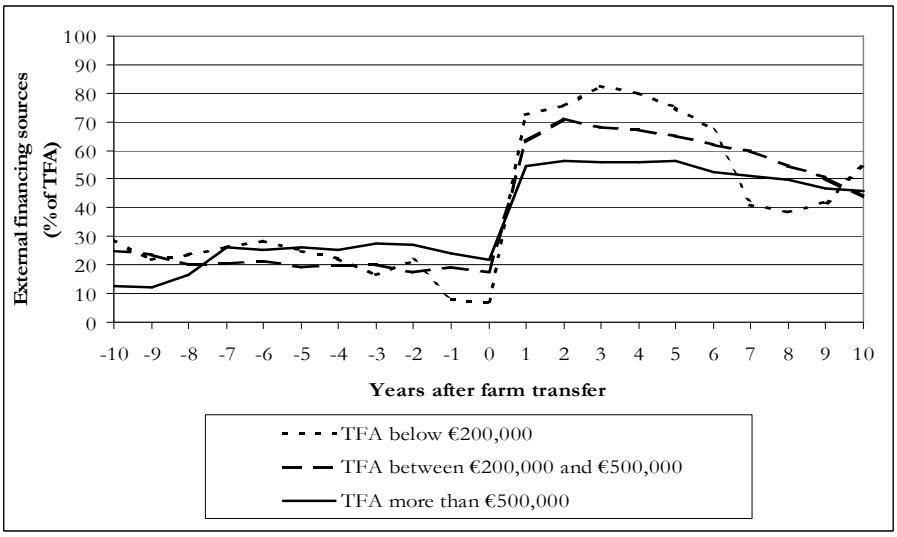

Figure 6.6 Relative amount of external financing of the family farm differentiated by TFA

Source: own calculations based on Flemish FADN database

Table 6.4 gives an overview of the VLIF applications, related to submission trajectory. A subcategory diversification is indicated as the Flemish government pays high attention to farm diversification.

Table 6.4 Submission of VLIF applications (2006)

	Submissions through individual person	Submissions through financial institutions	Total amount of submitted costs
Total estimated cost related to establishment support	1,314,975	86,886,582	88,201,557
Number of submissions related to establishment support	16	413	
Average estimated cost related to establishment support	82,186	210,379	
Total estimated cost related to investment support	59,873,396	407,513,221	467,386,617
Number of submissions related to investment support	1,785	3,007	
Average estimated cost related to investment support	33,543	135,522	
Total estimated cost related to diversification investments	2,710,565	12,838,005	15,548,570
Number of submission related to diversification investments	90	141	
Average estimated cost related to diversification investments	30,117	91,050	
Total estimated cost	63,898,936	507,237,808	571,136,744
• Total amount through financial institutions	25,000[11]	454,867,660	454,892,660
• Total amount through own financing	63,873,936	48,427,362	112,301,298
Percentage own financing	100%	10%	

Source: VLIF 2007

Table 6.4 indicates that the majority of submissions related to establishment support are done through financial institutions. The average level of establishment cost is also much higher if financial institutions are involved. In case of financing

[11] No specific financial institution was indicated on the application form

investments through financial institutions, on average 10 per cent of owner's equity is provided by the PDM.

6.3. Methodology

6.3.1. Hypotheses

The importance of financing farm transfer is tested based on the following sub hypotheses:

> *6. High total farm assets are positive correlated with a high absolute external financing leap*
>
> *7. High total farm assets are positive correlated with a high relative external financing leap*
>
> *8. The way of financing the family farm determines farm management of the next farm life cycle*

6.3.2. Data

The results of this chapter are based on the FADN database (Section 5.5.2.1), the questionnaire related to the succession intention model (Appendix 1) and in-depth interviews.

6.3.3. Modelling changes in external financing at the moment of farm transfer

Figure 6.5 and Figure 6.6 indicate considerable changes related to the origin of farm financing at the moment of farm transfer. The external financing sources increase both in absolute and relative numbers as the successor makes use of bank loans to finance the farm transfer. An external financing leap is established.

By means of an econometric model, the influencing factors of this external financing leap are analysed. Based on the interview with Cops (2008), our hypothesis is that a high TFA entails a high external financing leap both in absolute as relative numbers, while the external financing leap is negative related with the debt status of the parents: financial institutions take into account the financial situation of the PDM when deciding on a loan for the successor. Moreover, our hypothesis states that the age has a negative influence on the external financing leap because older successor could already accumulate capital before farm transfer, and a high farm obsoleteness (FO), indicating relative depreciated machinery, lowers the external financing leap.

The external financing leap can be visualised both in absolute and relative numbers.

- The absolute external financing leap (AEFL) indicates the difference between the absolute external financing amount the first year after farm transfer and the absolute external financing amount in the last year before farm transfer.
- The relative external financing leap (REFL) indicates the difference between the debt status (external capital/total capital) the first year after farm transfer and the debt status the last year before farm transfer.

In Table 6.5, the descriptive statistics of AEFL and REFL are given.

Table 6.5 Descriptive statistics of AEFL and REFL

	Mean	SD	Minimum	Maximum	Cases
AEFL	104,511	110,072	0.00	586,673	115
REFL	35.18	30.16	0.00	96.15	115

To test the hypotheses, an ordinary least square data regression is performed related to the AEFL (Model [3]) and to REFL (Model [4]) making use of the Flemish FADN data. Based on the interview with Cops (2008), we assume that AEFL and REFL are influenced by the financial position of the leaving PDM ($SOLV_{PDM}$), the productive capacity after farm transfer (FO_{succ}), the age of the successor (AGE_{succ}) and the TFA of the farm after farm transfer (TFA_{succ}).

The FO (farm obsoleteness) reflects the modernity of the farm. FO is calculated as the accumulated farm depreciations divided by the total assets that have to be depreciated (%). FO indicates whether investments are made to remain competitive in a rapidly changing farm environment. An increase of the FO indicates that investments become dated. If new investments are made, this is reflected in a decrease in the relative amount that is already depreciated (i.e. decrease of FO). The financial position is reflected in the farm solvency ($SOLV_{PDM}$), calculated as the own capital divided by the current market value of the total assets before depreciation (%). It indicates the burden of debt by the farm, i.e. possible financial difficulties in the future. A high solvency involves that most of the farm property is owned by the PDM and loans from the bank are limited.

$$AEFL = \alpha_3 + \beta_9 FO_{succ} + \beta_{10} SOLV_{PDM} + \beta_{11} AGE_{succ} + \beta_{12} TFA_{succ} + \varepsilon \quad [3]$$

$$REFL = \alpha_4 + \beta_{13} FO_{succ} + \beta_{14} SOLV_{PDM} + \beta_{15} AGE_{succ} + \beta_{16} TFA_{succ} + \varepsilon \quad [4]$$

Table 6.6 provides the descriptive statistics, measures of central tendency, measures of dispersion, and number of observations of the four independent variables of the AEFL and REFL model. The correlation matrix is given in Table 6.7.

Table 6.6 Descriptive statistics of AEFL and REFL model

Variable	Mean	SD	Minimum	Maximum	Cases
FO_{succ}	44.14	26.10	1.74	90.20	115
$SOLV_{PDM}$	78.06	20.76	2.88	100.00	115
AGE_{succ}	28.71	4.66	21.00	42.00	115
TFA_{succ}	357,232.09	216,476.81	38,868.00	1,077,760.00	115

Source: own calculations based on Flemish FADN database

Table 6.7 Correlation matrix of the independent variables of AEFL and REFL model

	FO_{succ}	$SOLV_{PDM}$	AGE_{succ}	TFA_{succ}
FO_{succ}	1.000			
$SOLV_{PDM}$	-0.096	1.000		
AGE_{succ}	0.181 *	-0.214 **	1.000	
TFA_{succ}	-0.148 *	-0.302 **	-0.092	1.000

Source: own calculations based on Flemish FADN database
**: significant at 0.01 level
*: significant at 0.05 level

Within these ordinary least square regression models, no problems of multicolinearity, autocorrelation, heteroscedasticity or endogeneity are observed[12].

6.4. Empirical results

6.4.1. Absolute external financing leap

The model is tested by means of an ordinary least square data regression. Table 6.8 indicates that the independent variables of the AEFL model are statistically

[12] No problems related to multicolinearity are observed as the correlations in Table 5.6 and Table 5.7 are low. The Durbin-Watson statistics indicate no problems of autocorrelation (AEFL: 1.77 and REFL: 1.99). The graphical interpretation of squared residuals in relation with AEFL/REFL indicate that there is no heteroscedasticity. The Hausman test is used to test the endogeneity.

significant at the 5 per cent alpha level. The constant is not significant at the 5 per cent level. The independent variables of the model account for 36 per cent of the variance in the dependent variable (adjusted R^2).

Table 6.8 Parameters of the OLS data regression of the AEFL model

Variable	Coefficient (β)	St. Error	β/st.er.	P[|Z|]>z
Constant	52,907.41	76,360.77	0.693	0.490
FO_{succ}	-1,234.53	325.77	-3.790	0.000
$SOLV_{PDM}$	2,003.89	432.96	4.628	0.000
AGE_{succ}	-3,772.83	1,852.11	-2.037	0.044
TFA_{succ}	0.162376	0.0410286	3.958	0.000
Adjusted R^2	0.36			
Model test	F(4, 110)	= 17.16		0.000

The results of this model indicate that *AEFL* and the variable *FO* are negatively correlated. If *FO* increases by one per cent, all else constant, the AEFL decreases with on average €1,235. In other words, more modern farms who have recently invested and thus have to depreciate more farm investments, need a higher amount of external financing sources to cover the farm transfer. The solvency of the previous farmer before farm transfer influences the AEFL in a positive way. An increase of the solvency by one per cent, ceteris paribus, enables the successor to have an average increase in the external financed capital by €2,004. It means that banks put more faith in the successor if the parents were more reliable in repaying debts. Within the evaluation of risk at the moment of farm transfer, financial institutions include indeed characteristics of the previous farmer (Cops 2008): higher loans are approved if the solvency of the previous farmer was more favourable. The negative effect of the age on the AEFL, holding all else constant, indicates that older farm successors need less external financing. Each extra age year of the successor make that the AEFL decreases with €3,773, all else constant. During the years before farm succession, successors are able to accumulate own financial means. The longer this period, the less the requirement for external capital. Finally the size of the farm, reflected in TFA has an influence on the AEFL of the farm transfer. An increase of the TFA by €1,000 increases the AEFL by €162. The transfer of larger farms, in terms of TFA, entails higher external capital needs in absolute numbers, but the increase is disproportional.

6.4.2. Relative external financing leap

The results of the REFL model are given in Table 6.9. Within this model, all independent variables are significant at the 5 per cent level.

Table 6.9 Parameters of the OLS data regression of the REFL model

Variable	Coefficient (β)	St. Error	β/st.er.	P[|Z|]>z
Constant	47.18	20.66	2.284	0.024
FO_{succ}	-0.310	0.088	-3.515	0.001
$SOLV_{PDM}$	0.593	0.117	5.060	0.000
AGE_{succ}	-1.270	0.501	-2.534	0.013
TFA_{succ}	-0.000023	0.000011	-2.053	0.042
Adjusted R^2	0.38			
Model test	F(4, 110)	= 18.30		0.000

Similar to the AEFL model, an increase of FO_{succ} by one per cent, decreases the *REFL* with 0.31 per cent, ceteris paribus. In other words, more modern farms have a relative higher amount of external financing. An increase of the solvency of the leaving farmer by one per cent, holding all else constant, is reflected in an average increase of the *REFL* by 0.59 per cent. An increase of the age of the successor by one year, decreases the *REFL* by 1.27 per cent, ceteris paribus. Both the AEFL and REFL model indicate the same tendencies for farm obsoleteness, solvency and the age of the successor. The two models differ related to the influence of the farm size. The *REFL* decreases with 2.3 per cent if the TFA increases with €100,000. Larger farms need in absolute terms more external financing to cover farm transfer, but in relative terms the external financing is less important than on smaller farms. The descriptive tendencies of Figure 6.6 are confirmed by the REFL model. As the VLIF support is limited to a maximum amount of €250,000, farm successors tend to limit the bank loans and rely on the family to overcome the transfer period through, e.g. gradual farm transfer, family loans and gifts.

6.4.3. Influence of financing on farm transfer

6.4.3.1. Types of farm transfer

In general, two types of farm transfer can be distinguished: the direct farm transfer and the gradual farm transfer. Within the direct farm transfer, the whole farm is transferred at a given moment from leaving PDM to successor. All financial

arrangements are made at that time, entailing that the successor has a high burden of debt. The advantage of the direct farm transfer is that family conflicts related to the farm value can be limited. The farm management between the leaving PDM and the new PDM is clearly separated. The disadvantage is that the high burden of debt brings along the impracticability of new investment in the years following the farm transfer.

The gradual farm transfer causes a lower financial burden for the new PDM: in the first stage, the moveable property of the farm and production rights are transferred to the successor, often for an amount of €250,000, because this is the maximum cost for VLIF support. In the following years, the remaining moveable property of the farm and production rights can be transferred to the new PDM. The farm buildings and agricultural land in property of the leaving PDM are rented to the successor. In the majority of cases the successor becomes the new leaseholder of the rented agricultural land, instead of the leaving PDM (Section 6.4.3.4). The farm buildings and agricultural land in property are transferred gradually from the leaving PDM to the successor during the farmer's career. At the end of the new farm life cycle, the majority of the farm is owned by the new PDM (Van der Meersche and De Marez 1997). The advantage of the gradual farm transfer is a higher feasibility of farm investments in the years following the first stage of farm transfer. These investments are made in order to stay competitive. During the gradual farm transfer the leaving PDM and the successor ('samenuitbating') often cooperate (Van der Meersche and De Marez 1997).

The type of farm transfer will have also an effect on the farm strategies used (Section 6.4.3.2) and on the length of the succession ladder (Section 6.4.3.3).

Farmer Jan (26):

"At the moment of farm transfer, I took over the moveable property of the farm for an amount of €250,000, as this is the maximum amount covered by VLIF (Flemish Agricultural Investment Fund). This was 60% of the farm. The transfer of the next part of the farm will be at the moment that my father retires, or if there are financial or tax advantages. I do not take the support for granted, I would prefer a system with fair product prices, and without such support, because in that case, the government does not have to put limitations on production etc. So everything free, a good price and no support any more!"

Farmer Bart (33):

"It was a direct farm transfer, a sale arranged by the notary. It is financially difficult, but I like it more this way because if later one of the parents dies, brothers and sisters (in law) are also involved and problems arise. There were no gifts, so at the moment something happens, everything is mine."

6.4.3.2. Farm transfer strategies

A major constraint in replacing one generation by another is the transition phase, which may include the cooperation between 2 generations. During this period, the inclusion of a new farm worker tends to cause a fall in the average productivity of labour because other production factors, land in particular, are not very flexible (Blanc and Perrier-Cornet 1993).

Within the sample of the survey among Flemish farmers' children, the successor is already designated on average 5 years before, or in other words given the average age of 23 of respondents, at the average age of 18 years and the transfer will be within 6 to 7 years, at the average age of 29. At that time, the father will reach the average age of 61, and can retire. This makes that within the sampled families the transition phase started around the average age of 50 years of the PDM, which is in accordance with the results of Chapter 5.

In general, the length of the transition phase is the outcome of 3 main variables: the age difference between the leaving PDM and the successor, the age at which the leaving PDM retires and the age at which the successor enters working life (Blanc and Perrier-Cornet 1993). In order to avoid lower productivity, the successor can raise the potential farm income, creating an economic surplus that can be divided between the two generations (parents and successors). This makes both parties better off than their second-best alternative. The second-best alternative can be for the parents to eventually sell the farm outside the family, and for the child to find an alternative source of income, or for both, delaying the succession decision by another period before making an irreversible agreement (Kimhi and Nachlieli 2001). In general, farm families use different strategies in order to increase or decrease the length of the transition phase (Boehlje and Eisgruber 1972). In larger families, the farm can be transferred later, since there are more potential successors and parents can take more time before making a decision, especially if uncertainty about successors' performance exists (Nerlove *et. al.* 1987 referred by Kimhi 1994). A way to shorten the transition period, which is common in Ireland, is that farmers marry late and choose their successors among the younger children. In this manner, the age gap between the successor and his father is widened, and the transition period shortened (Blanc and Perrier-Cornet 1993). Another way to shorten the transition period is the occupational mobility, where the possible successor takes an off-farm job for some time, until the father gives up managing the farm. This supposes an open attitude towards changing jobs, the availability of jobs outside the farm and a good mobility (Blanc and Perrier-Cornet 1993, Hennessy and Rehman 2007).

Hypothesis 8 did not focus on these strategies in particular, neither on the age difference between leaving PDM and the successor and the length of the transition stage. In our Flemish dataset, the average age of the farmers to have their first child is 27 years, while for the total male population in Belgium this average age is 31 year (Federal Public Service Economy SMEs Self-employed and Energy 2008b). This

indicates that the Irish strategy of delaying marriage and birth of the first child is not used in Belgium. Opposite, Flemish farmers have their first child on a relatively younger age than in general.

Our results indicate that the number of children has also no influence on the duration of the transition phase. Only the age at which the successor is designated, is related with the school level: the average age of successor designation increases as the level of schooling increases.

The in-depth interviews and FADN accounting data indicate both a strategy of creating more labour intensive activities on the farm (Figure 6.7) and a strategy of occupational mobility in Flanders (Figure 6.8). After finishing their studies, farmers' children work a couple of years outside the farm before taking over the family farm. At the moment of farm transfer they reduce the off-farm employment. The possible danger of this transition phase strategy is that occupational mobility evokes farm exit, but on the other side, it gives the potential successor the possibility to make a well-considered choice.

Farmer Jan (26):

"I always wanted to take over the family farm. But my father was not yet old enough to retire when I finished my studies as agricultural engineering (industrieel ingenieur landbouw). So I started working as salesman in a crop protection firm, but I didn't like it that much. After 14 months, I changed the job, but in this new job, the work I did was not related to my studies. I decided to never work for an employer again and started as self-employed person. I took over the family farm for 60%, but there was not enough work on the farm for two full time labour units. So I'm also working as agricultural contractor, and in winter, I work as freelancer for a seed company. This is a provisional arrangement: after we finished the slurry depot and the new cow house, we will enlarge the milk quota. At that moment, there will be work enough on the farm and I can quit my job as freelancer."

Successor Raf (22):

"If the farm remains profitable, I would like to take over the family farm, but first I want to work for 10 to 15 years. My father is only 50 years. But during that period, I would help my father during the weekends. My parents would give me a monthly wage for the weekend labour. If I wait for 10 to 15 years, the future of the farm will be more clear, as the dockland of Antwerp is expanding and our farm is threatened. But my father has doubt about the fact that I will return to the farm if I start to work out of the farm. He is afraid to lose me, but I do not think that this will be the case."

Figure 6.7 Average labour use before and after farm transfer

Source: FADN database

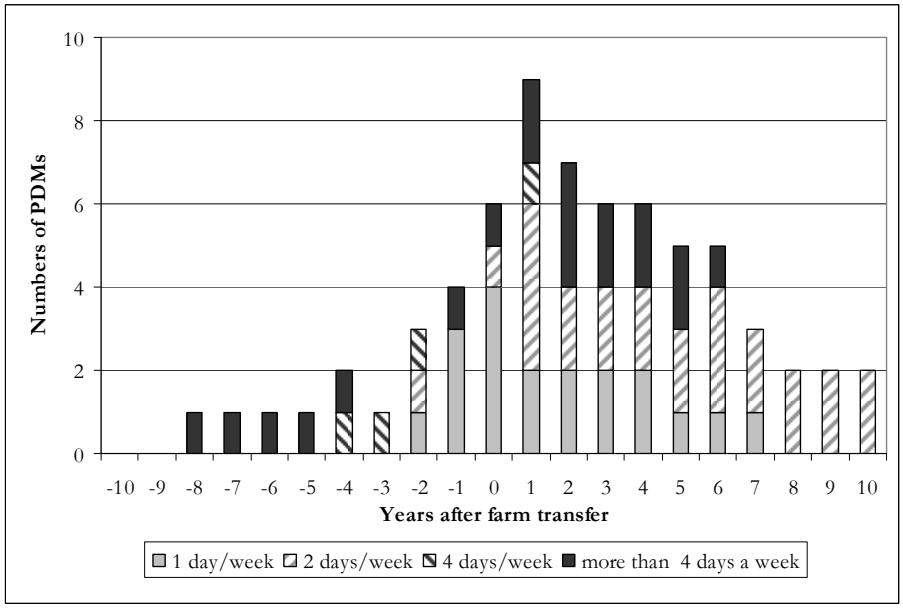

Figure 6.8 Off-farm employment of PDM[13]

Source: FADN database

[13] Before farm transfer (until year 0), the PDM refers to the leaving PDM. After farm transfer (from year 1) the PDM is the farm successor.

6.4.3.3. Succession ladder

During the transition phase, the managerial control of the family farm is handed over, bit by bit, to the successor. He is climbing gradually the 'succession ladder', which is the order in which the successor is getting involved in farm management tasks. According to Hastings (2003), first the technical decisions (e.g. type of fertilizer to be used) and the tactical decisions concerning the day-to-day planning and organisation of the work, are handed over to the successor because considerations of retirement and succession cannot be disentangled from day-to-day farm-management (Kimhi and Lopez 1999). Next come the decisions related to the long-term strategic planning of the farm business (e.g. deciding and planning capital projects). The following rung of the ladder are the decisions related to the employment and management of staff on the farm (e.g. deciding when to take on additional staff). On the fourth rung, the successor begins to become involved directly in financial matters (e.g. negotiating sales of farm products). And finally the last rung is the decision when to pay bills: this is one of the last areas of responsibility to be handed on to the next generation (Errington 2002).

Based on the questionnaire related to the succession intention model (Appendix 1), our results indicate, to a certain extent, the same follow up of handing over the managerial control as proposed by Errington (2002), although we distinguish a more limited number of rungs within the Flemish family farms (Figure 6.9). The following rungs can be distinguished:

- Farmers' successors indicate that they are first involved in the day-to-day farm management: they are involved in daily planning and organisation of the work
- The next rung is related to the technical decisions, such as type of fertiliser to be used etc.
- The third rung involves the long run planning, including financial negotiations etc.
- The last rung is related to the payment of bills and people's management

The comparison between the results of Hastings (2003) and the results of our research, reveals that the first rungs are more distinguished within our results: first decisions related to the daily planning and the organisation of the work are handed over, not yet including the technical decisions. These only come on the second rung, while Hastings (2003) all includes them in the first rung. On the next rung, similar as in the research of Hastings (2003), the long term planning is handed over, but we include already the financial decisions. Payment of bills is situated on the last rung, in combination with the management of labour. The management of labour is, according to Hastings (2003), handed over in an earlier stage, but the fact that it is situated on the last rung can be ascribed to a limited amount of hired labour in Flemish agriculture.

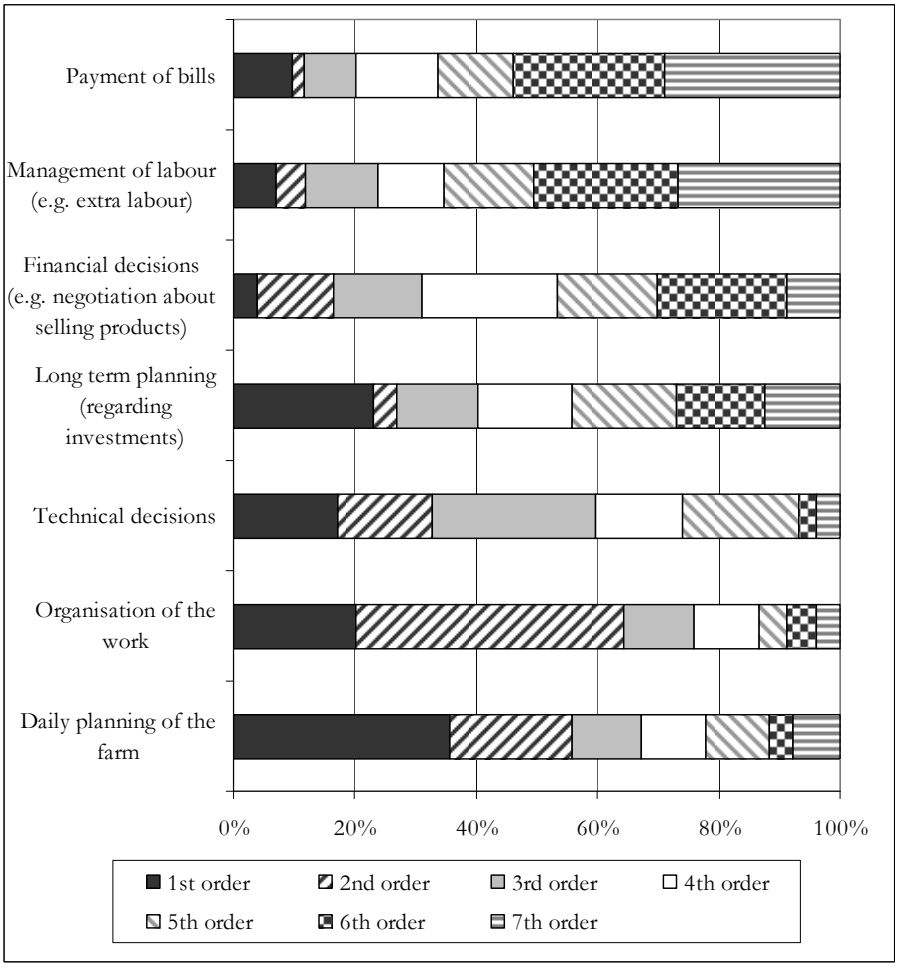

Figure 6.9 Order of involvement in the managerial control by the farm successor[14]

Source: SIM questionnaire

6.4.3.4. Land

Both in direct and gradual farm transfer, the successor mostly rents the agricultural land from the parents or takes over the land lease of the previous PDM because the majority of the agricultural land in Flanders is rented. This is the result of history and legislation: in the 19th century, liege lords leased out land to farmers (Swinnen 2002). Until 1950, farmers bought land at moments when agriculture was profitable and sold land at times of losses. But changes in the land lease legislation in favour of the leaseholder, made that this cyclic tendency ended and on average 70% of the agricultural land is leased (1952: maximum prices of land lease are established; 1967:

[14] The percentages indicate the number of respondents that ranked a management aspect at a given rank order

an automatic renewal of the land lease contract after a period of 9 year land lease is put into force). Moreover, in case that land is property of the farming family, the Belgian legislation (Belgisch Staatsblad 2007) states that 'the inheritance is divided in equal shares, but the preservation of the unity of the holding is primordial', making it normal that the successor has to lease the land from his non-farming brothers and sisters.

In general, the land lease legislation states that land lease is provided for a period of 9 years, but also career land lease (loopbaanpacht) is possible (duration is equal to 65 year minus the age of the PDM, although the minimum duration is 27 year) (KBC Bank NV 2004). The career land lease gives more security to the PDM, but the landlord can ask higher rent. Seasonal land lease (seizoenspacht) and crop land lease (cultuurpacht) last less than one year, and are not bounded to the land lease legislation (KBC Bank NV 2004).

The leaseholder can transfer the lease to his descendants or adopted childs, to those of his husband/wife, or to the husbands or wifes of his descendants and adopted childs, without permit of the landlord (KBC Bank NV 2004, De Bondt 2005). In all other cases, the landlord has to give his permission.

If the leaseholders declare, within a period of 3 months after farm transfer, to the landlord that the lease is transferred, then it is called a 'privileged transfer of the lease' (bevoorrechte pachtoverdracht), and brings along a land lease renewal (pachtvernieuwing). A new first land lease period of 9 years starts. The old leaseholder is released from all obligations that arise after the notification (KBC Bank NV 2004).

The landlord can resist the privileged transfer of the lease, within a period of 3 months following on the notification, and based on serious grounds explained in the law. The major reason is the intention of the landlord to exploit the land himself. If the transfer of the land lease to a third party happens without the approval of the landlord although this is required by law, the landlord can break the lease due to illegal transfer of the land lease (KBC Bank NV 2004).

If a farmer wants to start as legal entity, the land lease has to be transferred from the natural person to the legal entity that becomes the new operator, except for the agricultural company (Landbouwvennootschap – LV). From that moment on, no transfer of land lease is required and the land lease lasts for successive periods of 9 years.

If the land was in ownership of the parents, the successor will often not buy all the land at the moment of farm transfer because of high land prices, but a land lease contract between the new PDM and the parents will be established (Figure 6.10). After a certain period of time, the successor can become owner of the land through buying the land from the parents or inheritance (Elhorst 1987, Landbouw-Economisch Instituut and Rabobank Nederland 1987).

Figure 6.10 Relationship between land in ownership and rented land before and after farm transfer
Source: FADN database

Farmer Peter (28):

"It was not a problem to transfer the land lease to the BVBA. We had a meeting with all landlords of which we rent land. Part of them is family, and they did not have any problem with the transfer of the lease. If you are a natural person, or an agricultural company (LV), you can have privileged transfer of the rent, but this is not the case for the BVBA. So you have two possibilities: you have a meeting with all landlords and explain the intentions of becoming a BVBA, or you do it without telling them, but at the moment that they know that the farm is converted to a BVBA, you risk that they stop the land lease, and you lose part of the land. If part of the rented land is close to the homestead, that involves high risk. In our case, the rented land is rather far from the homestead and it would not be a breaking point if I would loose 1 or 2 hectares. For others, this is of major importance."

Farmer Jan (26):

"Everywhere, there is a shortage of agricultural land. In this region it is a problem to acquire extra land, so we have to work in a tactical way. For the farm that we have taken over, half of the land is bought, half of it is rented.
In my opinion, there is problem with the land use. In our street there is a farmer aged 75 who continues to farm, but according to me, that is not possible. Another one is aged 64 and will continue farming until his grandson, aged 10 years, will take over the farm. Is this also the case in other occupations? Somebody who works in a factory, or a butcher or baker will not work until he is 75, even if he likes the profession…"

6.4.4. Farm practice

6.4.4.1. Farm management

According to McCrostie Little and Taylor (1998), the predominant type of farming is unlikely to change in the process of succession, but the actual methods of farming may change between generations. Potential farm successors can also intend to carry out changes in the farm management after farm transfer. In our research two third of the farm successors want to implement production investments. An increase of the agricultural land is an option for half of the respondents. But changing the kind of commodity produced is not the prime objective of the majority of farm successors, as is also indicated by the fact that only 17 per cent of the respondents states the objective to change the kind of animals or crops after farm transfer (Table 6.10).

Table 6.10 Management changes after farm transfer (% of respondents intending change)

Investments based on production	68
Increase of agricultural land	48
Changes in management	38
Investments based on environment	25
Diversification of agriculture	17
Changes in kind of crops and animals	17
Changes in production method	14
No idea	11
No changes	7

Source: SIM questionnaire

In general, farm successors do not intend to change the farm type, but changes are made to improve the production. This is linked to the goal of a high quality of plant and animal production as stated by 64% of the respondents (Table 6.11).

Table 6.11 Farm successor's goals in future farming system (% of respondents' goal)

High quality of plant and animal production	64
Positive image of farming to outside world	54
Higher financial independence of farm	43
Expand the farm size	37
Develop farm for future generation	23
Environmental friendly production	21
Search for innovative production methods	20
Limitation of risk	18
Changes in kind of animals and crops	8

Source: SIM questionnaire

Farmer Jan (26):

"I never considered changing farm type. Maybe I will increase the arable production, because I like it, we are quit freaks of agricultural machinery. We have taken over another arable farm, as we needed more land because of the manure regulations. Dairy production is easy, and the combination with arable production is good. After a winter with dairy production, you can go outside and you need in any case the land for the manure regulations. In the future, we will maybe cultivate a little more vegetables to increase the financial profitability by having 2 crops a year. In the past, this was not possible because we needed grass land for the cows, but the extra land can be used for vegetables such as spinach."

Successor Alexander (18):

"If I take over the farm, I'll maybe quit the sow production, and only fatten the piglets, but the disadvantage is that I have to purchase all the young animals, and the risk of diseases increases. Fattening pigs is much easier to work, because sows are labour intensive and the profitability is low. I would keep the vegetable production, but if I have the opportunity, I would increase the farm size. The problem is that at the moment that some land is sold, all neighbours start to offer like crazy and the land prizes are too high. "

6.4.4.2. Farm labour

6.4.4.2.1. Labour availability

In our survey (Appendix 1), the labour input on the farms consists in 89 per cent of family labour. Only a limited amount of PDMs uses external labour sources which is also confirmed by the FADN data (Figure 6.7). The potential successors are involved in the farm work, and as stated by Gray (1998), if the successor works on the farm, usually for minimal remuneration, he demonstrates his commitment to farming as a career and his abilities to be a successful farmer. The net cost of family labour will always be lower than other labourers, given the land-specific experience acquired by or provided to the (working) children (Chapter 1).

Figure 6.11 indicates that after farm transfer, on one fourth of the farms, the labour requirements are adapted to the availability of a single person. On 20 per cent of the farms, both the manager and the partner are involved in the farm work, while on 38 per cent of the farms the manager and other family members provide the labour. Often the father or mother is still helping on the farm after farm transfer (Figure 6.12). In 16 per cent of the cases, cooperation between parents and successor exists, often during a gradual farm transfer. Figure 6.7 confirms these results: before farm transfer, the fulltime labour units steadily increase, indicating the cooperation during the (gradual) farm transfer; at the moment of farm transfer, the average fulltime labour units decrease. This tendency continues the first years after farm transfer: the amount of cooperation between the leaving PDM and the successors gradually decreases.

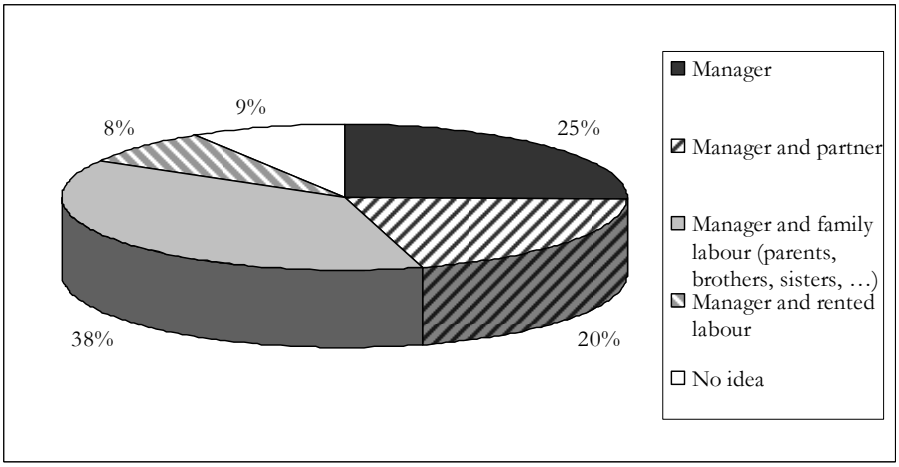

Figure 6.11 Labour division after farm transfer

Source: SIM questionnaire

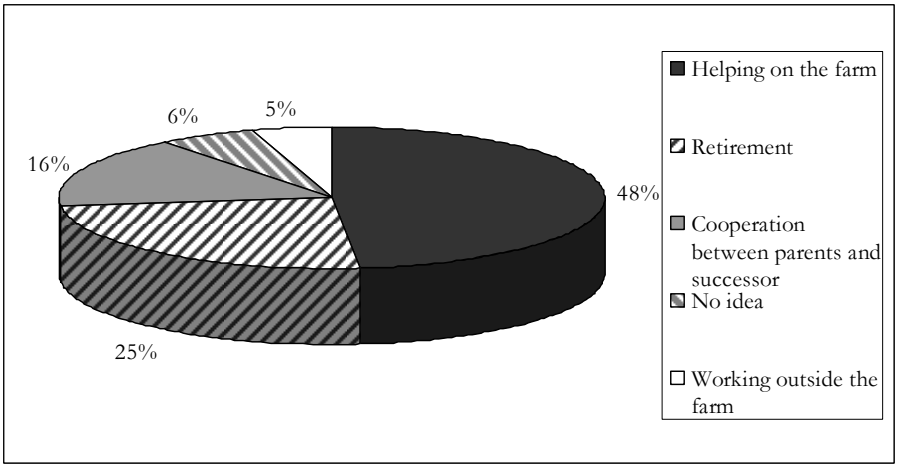

Figure 6.12 Occupation of parents after farm transfer

Source: SIM questionnaire

Modern technology tends to create reduced work-time in many work situations. Depending on farm type, farm size, available time and motivation, it can be likely that the farmer or another family member will combine some other paid employment with farming (Gasson *et al.* 1988, Loyns and Kraut 1992, Ahituv and Kimhi 2002, Harsche 2005, Salvioni *et al.* 2005, Ahituv and Kimhi 2006, Benjamin and Kimhi 2006) as a way of supplementing the family income with an off-farm income. In combination with higher off-farm wages, the attractiveness and competitiveness of part-time farming increases as an alternative to a less efficient enlargement of farms in terms of farm income (Schmitt 1991). But part-time farmers have also disadvantages compared to full-time farmers (Loyns and Kraut 1992):

- Part-time farmers have a higher cost of credit and more limited credit availability
- The equipment that they use is poor, and often too much related to the farm size
- Part-time farmers lack technical skills and knowledge

Our in-depth interviews indicate that successors are often working part-time during the transfer period, but intend to work full-time in the future.

6.4.4.2.2. Role of partner

The role of the partner cannot be underestimated in family farming (Blanc and MacKinnon 1990, Keating and Little 1994). Data of the Directorate-general Statistics Belgium indicate that 88 per cent of the PDM is male (Federal Public Service Economy SMEs Self-employed and Energy 2006). Therefore, the role of the partner reflects in the majority of cases the role of the woman in the family farm.

In the farm business, women are more involved in the business than in other occupations. The term 'women farmers' covers women working in agriculture, as owners, joint owners, or spouses of farmers working full-time or part-time on the farm (Economic and Social Committee 2000). Some studies show that decision making on many family farms is still male dominated (Gasson and Winter 1992, Solano *et al.* 2001), although this can differ according to region and culture. The share of farmers' women working off-farm is increasing, which can be caused more by development in society, rather than by a specific development within the farming sector. Since the farm family is both a social and an economic unit, the farmer's wife has to combine a number of roles, contributing to the business as well as fulfilling the tasks of wife and mother (Gasson *et al.* 1988). The on-farm involvement of women can be delineated in five categories (Bokemeier and Garkovich 1987):

- Farm homemaker, who takes care of the household, but is not really involved in the farm
- Agricultural helper
- Business manager with responsibilities for financial decisions, but not farm operations
- Full agricultural partner who shares equally with her husband work and decision making on all aspects of the farm
- Independent agricultural producer, who manages the farm largely by herself

The change in society can also change the on-farm involvement of women, or reallocate work from an on-farm to an off-farm job (Figure 6.13).

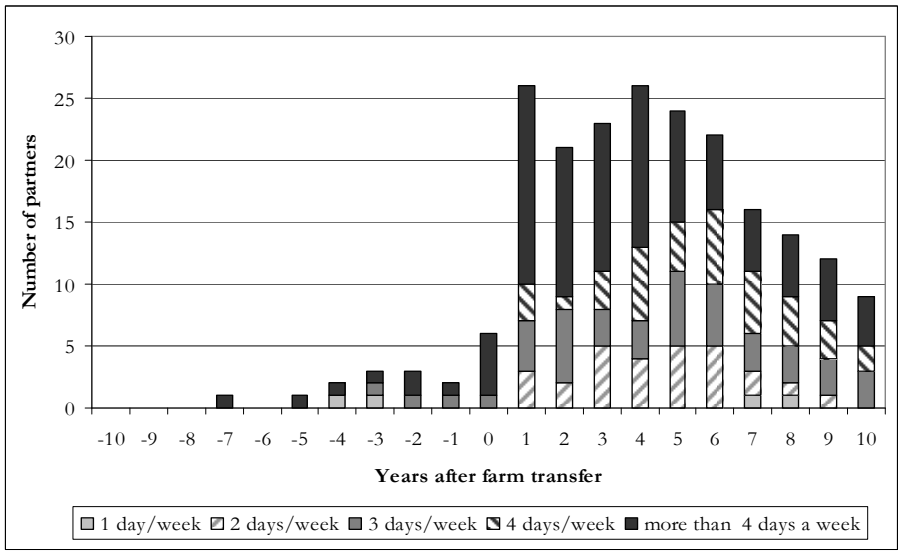

Figure 6.13 Off-farm employment of partner

Source: own calculations based on Flemish FADN database

The partner of the leaving PDM has in the majority of cases no off-farm employment, while partners of successors work out of the house, often on part-time basis.

Our results indicate that the majority of the successors want that the partner is involved in the farm work, both as manager (34%) or helper (20%) (Figure 6.14). Some of the partners will be responsible for the administration and finances (12%). But also 24% of the successors indicate that the partner will work outside the home.

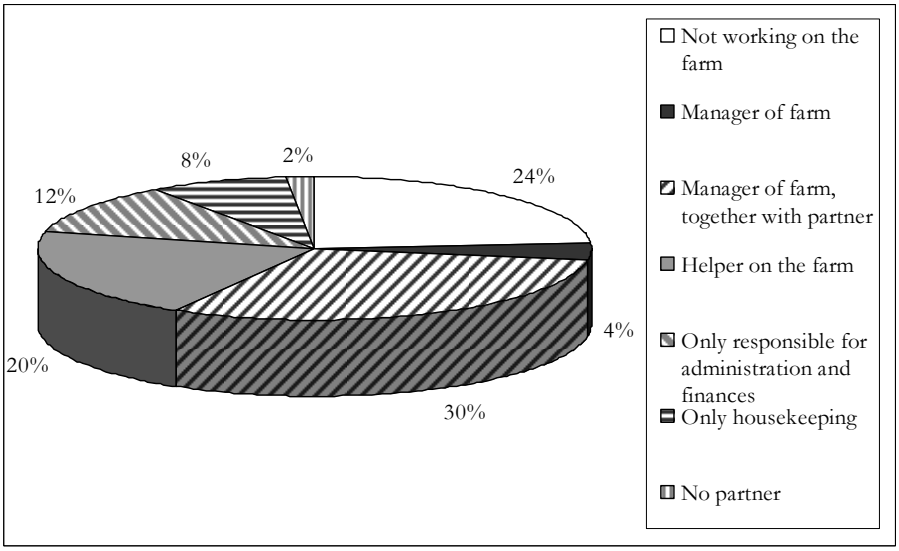

Figure 6.14 Role of partner after farm transfer

Source: SIM questionnaire

Successor Alexander (18):

"Actually, I do not want a wife who is working on the farm. She has to work out of the house. Because it has advantages and disadvantages: if you are working together all the time, then you are happy to not see each other once in a while. If your partner is working out of the house, she will get a payment of pensions."

Farmer's wife Lieve:

"At this moment, I work full time out of the house. I teach and it is a good combination with the children. In the future, I'll see if I start to work on the farm, but I also like it to work out of the house, to have social contact. It has to be financially wise to work on the farm, because at this moment, we live from my wage, and the benefits of the farm are used to invest and to let the farm grow."

6.4.4.3. Farmer's income

The transfer of the family farm influences also the farmers' income. Figure 6.15 indicates that the factor income[15] increases gradually both before and after farm transfer. No drastic change in factor income occur at the moment of farm transfer. The transfer of the family farm has however more influence on the farmers' income[16]. Although the average factor income continues to increase, the average farmers' income decreases because at the moment of farm transfer (1) depreciations increase if investments are made, (2) the amount of paid land lease increases because also land lease to the parents has to be paid (Section 6.4.3.4), (3) the interest on the capital required for the farm transfer has to be paid. In general, there are more fixed costs at the beginning of the farm life cycle, compared to the end of the farm life cycle. This makes that the average farmers' income decreases after farm transfer. Figure 6.15 also indicates that the average total labour cost does not change significantly at the moment of farm transfer.

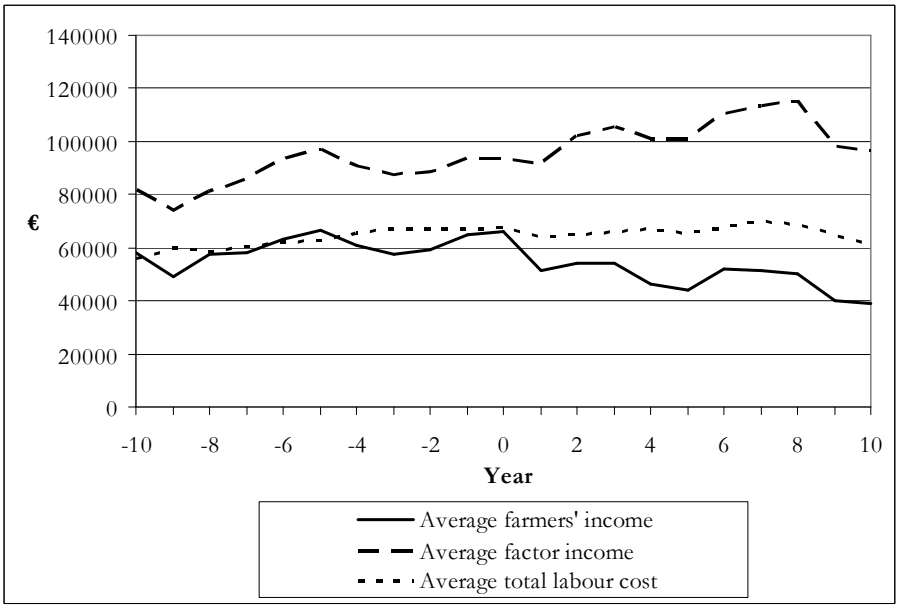

Figure 6.15 Evolution of factor and farmers' income before and after farm transfer

Source: own calculations based on Flemish FADN database

[15] Factor income = gross output – operational cost + production subsidy + interest subsidy – taxes

[16] Farmers' income = factor income – depreciation – paid land lease – paid labour – paid interest + investment subsidy

6.5. Conclusions

Financing farm transfer is one of the crucial aspects in the farm life cycle. As farm successors do not have the own financial means to cover the farm transfer and new investments, the family farm take-over price is negotiated between the different involved parties (successor, family and financial institution) and financial means have to become available to finance the transfer. The financial means consist on the one hand of family's equity, and on the other hand of loans of external financial institutions. The family's equity determines the resilience to adverse farming conditions. Financing by the family can happen in a direct way through gifts or family loans, but also indirect through gradual farm transfer. After farm transfer, the family's equity can be increased through establishment support. An external source of financing are the bank loans that are used in the majority of farm transfers. The characteristics of the applicant, the farm and the financial position determine the risk involved and the evolving interest rate.

By modelling changes in external financing, it is clear that both the farm obsoleteness, the age of the successor, and the solvency of the leaving farmer influence the external financing leap at the moment of farm transfer. Farm transfer and farm investments entail high external capital needs, but the accumulation of capital by the successor before farm transfer lowers the burden of debt. The absolute external financing leap increases as the total farm assets increase, but the relative external financing leap decreases on larger farms: farm successors tend to limit the bank loans and rely on the family to overcome the transfer period through, e.g. gradual farm transfer, family loans and gifts. This confirms hypothesis 6, but we reject hypothesis 7.

The types of farm transfer have implications on the different ways of financing farm transfer. Within the direct farm transfer, the successor has a high burden of debt, and there is limited space for extra farm investments. The gradual farm transfer causes a lower burden of debt, and has a higher feasibility of farm investments after farm transfer to increase the competitiveness and viability of the farm, but the financial implications of farm transfer last for a longer time. Being on good terms with the family members is crucial within gradual farm transfer.

Farm transfer includes also a transition period in which different generations are depending on the family farm. In some cases, extra farm activities provide income for two families. But PDMs also use different strategies to shorten the transition period, and extra income has to be generated. Often the successor works for some time outside the farm, and returns to the farm at the moment that the parents retire, but one of the main concerns of the parents is that the successor will refuse to come back home and take over the family farm.

After farm transfer, the farm practice will to a certain extent be the continuation of the previous farm, although most successors aim at farm expansion in order to have

a viable farm. The land in ownership of the leaving PDM is rented by the successor, or the land lease is transferred to the successor. Over time, the successor will buy the land and is owner at the end of his own farm life cycle.

The transfer of the family farm has also an effect on the farmer's income. Although the factor income will not change significantly, the increasing fixed costs after farm transfer make that the farmer's income decreases after farm transfer. With these results, we confirm that the way of financing the family farm determines farm management of the next farm life cycle.

Chapter 7 – Importance, knowledge and perception of the business legal structure of the farm

7.1. Introduction

The business legal structure of a farm marks the agricultural production unit. Business entities are capable of entering into contracts, or of being held responsible for their actions. The legal structure of the business will determine the separation between the responsibility of the individual person and the company. Further more, it may influence amongst others the access to subsidies, fiscal advantages and farm transfer. It is therefore important for a PDM to carefully consider existing legal possibilities.

The legal structure of a farm has inter alias an influence on the taxation, the legal liability, the land ownership and the farm transfer. Taken all aspects of legal structures into consideration, a farmer may select the best solution for his farm. But this is only possible if he possesses all necessary information on legal structures. The objective of this chapter is twofold: (1) to analyse the pros and cons of different legal structures in different Western European countries. As legal structures are considerably more present in French agriculture, we assume that French legal structures specifically designed for agriculture are better adapted to the needs of farmers than the Belgian 'agricultural company'; (2) to test the perception and motivation of PDMs related to different legal farm statuses. The resulting attitude is confronted with the characteristics of legal farm structures, in order to cluster farmers towards possible policy measures.

7.2. Business legal structures of farms

Running a family business is possible under different legal structures and may involve one or more family members (Burkart *et al.* 2003). According to Crijns and De Clerck, 79% of the Belgian firms are family businesses (Van den Berghe and Carchon 2002). But within these family businesses different legal structures can occur. At the moment that agricultural tasks can be easily monitored in terms of input or output, family farms in natural person shift more and more to other forms of agricultural organization (Schmitt 1991).

The two main structures in Western European agriculture are natural persons and corporations (companies).

Natural persons are non-corporate businesses run by sole traders or partners who are legally responsible for the business which itself has no legal entity (Hill 2005). Most of the family farms in Europe are farmed under sole proprietorship. This legal

structure has a number of limitations such as high capital outflow of the sector at the moment of succession, personal liability in case of failure or financial problems, high labour pressure. There are also fiscal consequences related to tax regulation. The number of these private farms declines over long term as the treadmill of technology lowers the real prices of agricultural output and makes smaller farms unviable (Eurostat 2002). To solve these problems, legal structures have been developed in different European countries. In the period 1990-2005, the amount of legal entities increased both in absolute and relative numbers (Table 7.1).

Legal structures for agricultural cooperation differ all over Europe. In France, an extensive offer of legal structures for agricultural enterprises is available (e.g. GAEC[17], EARL[18], SCEA[19]). Compared to the other European countries the share of legal entities within the French farm sector is considerable (Table 7.1). In Belgium, in 1979 the agricultural company ('Landbouwvennootschap', LV) was constructed as a legal structure specifically for agricultural firms. Although this specific legal structure for farms exists in Belgian law, the relative amount of business entities with separate legal personality can be compared with the German and Dutch case where no specific legal agricultural status exists (Schmitt and Hoffmann 2001). In Europe, non-agriculture business entities with separate legal personality are also used in farm business, but the majority of the farms are under sole proprietorship.

Table 7.1 Legal entities in agriculture

		Belgium	Germany	France	The Nether-lands
Number of legal entities	1990	500	7,280 [a]	n.a.[b]	2,570
	2005	3,560	23,580	138,640	5,780
% of total farms	1990	0.6%	1.2% [a]	n.a.	2.1%
	2005	6.9%	6.0%	24.4%	7.1%

Source: Statistisches Bundesamt Deutschland 2006, Eurostat 2007
[a] the calculation for Germany is based on the year 1991
[b] n.a.: not available

[17] GAEC: Groupement Agricole d'Exploitation en Commun
[18] EARL: Exploitation Agricole à Responsabilité Limitée
[19] SCEA: Société Civile d'Exploitation Agricole

7.2.1. Overview of business legal structures

An overview of the legal structures in agriculture is given in Figure 7.1.

7.2.1.1. Natural person

Within the natural person (NP), the farm can be managed in sole proprietorship, or farmers can collaborate in a 'maatschap' (partnership with relatives with equal liability of the partners). The 'maatschap' is a partnership without legal personality and is often used as collaboration between family members. In 2005, the 'maatschap' was the legal structure in 27.2 per cent of the farms in the Netherlands (CBS 2007). A Dutch 'maatschap' lasts on average 10 to 15 years (Van der Veen *et al.* 2002). In Belgium, only 4.2 per cent had this legal structure (Federal Public Service Economy SMEs Self-employed and Energy 2006).

In the configuration of NP, the farming activity is carried out by one farmer alone, or with members of the family. As self-employed person in Belgium, the PDM exercises a professional activity without being attached to an employer by means of an employment contract or status. The NP has in general the required labour and knowledge available. Own capital is supplemented with hired capital, in order to be able to produce. In the NP, no distinction between the farmer's personal assets and professional assets is made.

7.2.1.2. Business entity with separate legal personality

A business entity with separate legal personality (BLP) can be established specifically for agricultural purpose (e.g. LV, EARL, GAEC), or a general form of BLP can be used within the agricultural sector (e.g. BVBA[20], NV[21], CVBA[22]).

BLPs are characterised by legal bodies meaning that the firm receives an own legal identity. Family members can possess shares of the firm. BLP separates private assets from professional assets. The free transferability of shares can be limited and cooperation can be structured. BLPs give the farmer the possibility to attract partners for capital investment: non-farming family or third parties can enter certain types of BLPs. The BLP has an unlimited lifetime which entails that the continuity of the firm is independent of the people behind the firm. A BLP has also some

[20] BVBA: 'Besloten Vennootschap met Beperkte Aansprakelijkheid' - Private Company with Limited Liability or Ltd.
[21] NV: 'Naamloze Vennootschap' – Public Limited Company
[22] CVBA: 'Coöperatieve Vennootschap met Beperkte Aansprakelijkheid' – Cooperative Company with Limited Liability

economic advantages: the property holders can be remunerated for their investments in the firm, and non-farmer capital contributors have interest in the results (De Muynck 2007). The main disadvantages of BLPs are the difficulties for control, and high transaction and agency costs (Van den Berghe and Carchon 2003, Boatright 2004). In the family based Flemish agriculture, these general problems do not play a prominent role. A more important disadvantage is the more complex constitution. Various legal rules must be complied with within the functioning of a company: internal regulations and articles of associations must be drawn up, meetings must be held between members of the association and the farm falls often under more administrative demanding rules for obtaining subsidies, tax declarations and so on (Van der Veen *et al.* 2002, KBC Bank NV 2006, Terre d'Europe 2007).

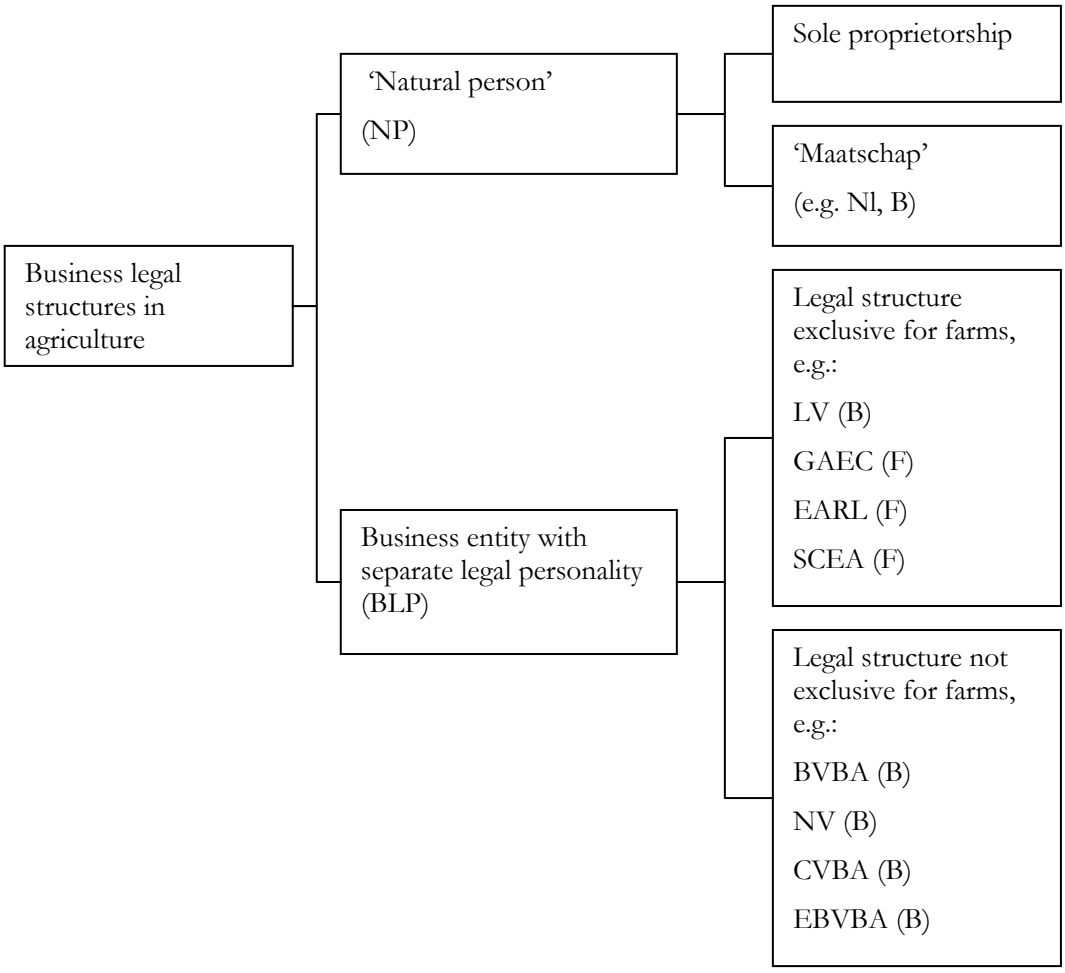

Figure 7.1 Overview of legal structures in agriculture

Source: own compilation

The Agricultural Company ('Landbouwvennootschap', LV, Belgium) is a very specific type of BLP for the purpose of operating an agricultural or horticultural business in Belgium. The LV has managing partners and – sometimes – sleeping partners. A managing partner is a partner who exercises an activity in a company to yield a return on the capital, which can be partly of his own. His activity can be managerial or administrative in nature. A sleeping partner is a partner who limits himself to receiving the benefits from his invested capital without exercising a professional activity. Managing partners have to earn more than 50 per cent of their income on their agriculture activities on which they spend minimum 50 per cent of their time (KBC Bank NV 2006).

A GAEC ('Groupement Agricole d'Exploitation en Commun', France) is a non trading partnership allowing farmers to work together under conditions that are comparable to those existing in sole proprietorship (NP). The partners keep their status of sole owner and each farmer can benefit of tax, economic and social benefits. All partners of a GAEC have to be farmer. The GAEC has economic, social and fiscal transparency. The members receive remuneration both as worker, and as capital provider. This legal structure helps to organise a peaceful transfer of the farm between parents and children (Terre d'Europe 2007; Van der Veen *et al.* 2002).

An EARL ('Exploitation Agricole à Responsabilité Limitée', France) is a non trading partnership for agricultural purpose. It enables a sole farmer owning 100 per cent of the capital to separate his professional assets from his private assets (Terre d'Europe 2007). The EARL and the GAEC are on the one hand legal bodies, but may on the other hand benefit from the fiscal advantages given to individual natural persons. It means that farmers profit from limited liability and dissociated capital, but are subject to the individual tax system and not to the company tax system (Van der Veen *et al.* 2004).

A BVBA (Belgium) is also a BLP in which the partners are only liable for the company assets. BVBA is the abbreviation of 'Besloten Vennootschap met Beperkte Aansprakelijkheid' (Private Company with Limited Liability or Ltd.). The capital is tied up in registered and not freely marketable shares. This way it is avoided that shares are transferred to outside parties without approval of the joint partners, resulting in loss of the family character of the company. A BVBA is set up by notarial act and has to comply with a number of accounting and administrative obligations (KBC Bank NV 2006). A special kind of BVBA is the EVBA (eenpersoonsBVBA) who can be established by one person, and all the shares are in the hands of one person.

The basic characteristics of the discussed legal structures are given in Table 7.2.

Table 7.2 Characteristics of legal structures

Legal structure	Structure exclusive for agricultural purpose	Number of Partners	Corporate capital	Taxation	Legal liability
Sole proprietorship	no	1	-	income tax	unlimited liability
Maatschap (NL, B))	no	minimum 2	-	income tax	unlimited liability
GAEC (F)	yes	minimum 2 maximum 10	€ 7,500	income tax	liability restricted to 2 times the capital input of the partner
LV (B)	yes	minimum 2	€ 6,150	income tax / corporate tax	unlimited liability for managing partners, limited liability for sleeping partners
EARL (F)	yes	minimum 1 maximum 10	€ 7,500	income tax	liability restricted to the capital input of the partner
BVBA (B)	no	minimum 2	€ 18,550	corporate tax	liability restricted to the capital input of the partner
EBVBA (B)	No	1	€ 18,550	Corporate tax	Liability restricted to the capital input of the partner

Source: Van der Veen et al. 2002, KBC Bank NV 2006, Terre d'Europe 2007

Farmer Peter (28):

"The conversion to a BVBA is established on January, 1st, 2007 at the moment we transferred the family farm. It was a long way, we had discussions with different advisors, we informed in the different banks. I had the impression that one advisor wanted us to start with an agricultural company (LV) in which the VAT accounting can be done, but they supported the lump sum accounting and the lump sum tax declaration and I wanted to get rid of that. I think that the BVBA has more possibilities in spreading out the gains and losses. You can transfer losses to the next year, which is not possible in the lump sum system. For example, this year the taxes will be a little higher in the dairy production, but there will be losses in the pig production. The latter results in taxes that equal 0, because negative amounts are not possible. However in a BVBA, you can transfer the gains of the dairy production to the losses in the pig production, and if there is a total loss, you can transfer it to the next year. In the lump sum tax declaration this is not possible, e.g. you will gain 0 for the pig production, but you do have to pay taxes for the dairy production, which is not the case for a BVBA. Personally, these are important aspects in the consideration of a BVBA.
Another aspect is that in the BVBA, the family expenditures and farm expenditures are completely separated. If the BVBA becomes bankrupt, it will not be a personal problem, except if we go bankrupt in the first 3 years, because then there is still personal liability. In an agricultural company, there is always personal liability.
The last advantage of the BVBA is that towards the next generation, it will be easier to transfer the farm, as shares can be gradually transferred."

7.2.2. Taxation

The legal structure of a farm has a major influence on the taxation regime. Although it is difficult to compare the taxation regimes of countries, some differences can be stated.

7.2.2.1. Taxation of natural persons

In most Western European countries, farms under natural person are taxed under the income tax with a progressive rate regime, but the interpretation differs. For the Belgian income tax, PDMs can choose between two systems. The so-called fixed system ('forfait' or lump sum per ha or animal) is based on estimated returns and costs that are yearly fixed for a crop or livestock category in a given region. Some additional costs are eligible for reduction, but e.g. no reduction of depreciations is available. The calculated income is taxed at the normal progressive income tax rates (Table 7.3). This system requires limited administration and accounting is not compulsory. The second system of income tax declaration in Belgium is based on

proven returns and costs. The income thus calculated is taxed at the same income tax rates. Accounting is compulsory for the second system. In case of large investments, a tax system based on proven returns and costs may be advantageous (corporate tax or income tax declaration based on proven returns and costs). In the fixed system, the estimated results and costs are based on the production of an average farmer. This makes that PDMs who are doing not so well, are paying more taxes than they would have to pay in the taxation system of proven results and costs. PDMs who are doing well will benefit from the fixed system.

Table 7.3 Comparison of the progressive income tax rate between France and Belgium (2006)

Tax bracket	Belgium	Tax bracket	France
€ 0.01 - € 5,940	0.0%	€ 0.01 - € 5,515	0.0 %
€ 5,940 - € 7,290	25.0%	€ 5,515 - € 11,000	5.5 %
€ 7,290 - €10,380	30.0%	€ 11,000 - € 24,432	14.0 %
€ 10,380 - €17,300	40.0%	€ 24,432 - € 65,500	30.0 %
€17,300 - €31,700	45.0%	> € 65,500€	40.0 %
> € 31,700	50.0%		

Source: Federal Public Service Financing 2007, Terre d'Europe 2007

In France, different taxation regimes exist depending on the average income of the farm. An individual farmer with an average income over the last 2 years, below €76,300 can opt for a lump sum ('forfait') system in which accounting is not compulsory. Two third of the French PDMs uses this income taxation system of which the taxation brackets are given in Table 7.3. French PDMs with an income higher than €76,300, will follow the simplified or normal regime in which accounting is obligatory (Terre d'Europe 2007). In France, the fixed system is only possible for individual PDMs on relatively small farms, while in Belgium, the fixed system is independent of the farm size for NP. The GAEC and EARL are taxed under the income tax and the size of the farm defines if accounting is compulsory. The fiscal regulations will not be a burden to change the legal structure, as the fiscal obligations are similar for NP, GAEC, EARL. In France, young farmers receive a 50% reduction on taxable profit for a 5 year period, besides other fiscal advantages, when they are taxed on actual income regime and receive settlement subsidies of Rural Code (Van der Veen *et al.* 2002).

In Germany, individuals pay taxes according to a progressive rate between 19.90 per cent and 48.00 per cent (Van der Veen *et al.* 2002).

In the Netherlands, a system of 'boxes' is used for NP, depending on the kind of income, supplemented with different tax-deductible items (e.g. Agricultural allowance – 'landbouwvrijstelling'). The tax rate of box 1 – taxable income from

work and home ownership – varies between 34.15 per cent and 52.00 per cent, box 2 – taxable income from a substantial (business) interest – has a fixed rate of 25.00 per cent and box 3 – taxable income from savings and investments – a fixed rate of 30.00 per cent (Belastingdienst 2007). The 'maatschap' in the Netherlands has more tax-deductible items than the Belgian 'maatschap' which is on fiscal grounds less profitable.

Farmer Jan (26):

"At this moment, we are paying taxes according to the lump sum system, but when we have built the new stables, we will probably change to the income tax declaration based on proven returns and costs. At that moment, we will probably also switch to an agricultural company (LV). I have already taken it into account, but at this moment, it has no use as we have limited costs because all stables are already depreciated."

Farmer Bart (33):

"At this moment we are a family farm in sole ownership, but at the moment they advise us another legal farm structure, we will change. If we build a new cowhouse, we will have to change the legal farm structure, because the lump sum system will not be advantageous any more."

7.2.2.2. Corporation tax

In Belgium, the corporation tax has a fixed taxation rate (33.99%) which is on average lower than the progressive rate of the income tax if the taxable income is higher than €322,500. Below this amount, 4 tax levels are applied (from 24.98% till 35.54%) (Federal Public Service Financing 2007). The corporation tax becomes a disadvantage at the moment that the farm receives a high amount of subsidies. The reduced tariff of 16.50 per cent taxes on European subsidies can not be used in BLPs. Accounting is compulsory in Belgian corporation tax. As agriculture is a sector with fluctuating revenues, BLPs can transfer profits and losses to the next year in order to reduce the tax burden. They can also pay a wage to the associates and pay less tax, but then associates will of course have to pay higher personal income taxes (under the progressive system explained before). Similar corporate taxation regimes exist in the other Western European countries. The corporation tax in France amounts to a standard rate of 33.83 per cent. In the Netherlands, firms pay 24.50 per cent tax on the first €22,689, the rest is taxed at 29.10 per cent. In Germany, the standard rate is 26.37 per cent, but PDMs are exempt from both trade tax on income and the special tax for businesses levied by the German municipalities (Van der Veen *et al.* 2002). Table 7.4 gives an overview of the calculated taxes and average tax

percentage of a given taxable income for NP and BLP, apart from the differences in tax reductions in each country.

Table 7.4 Calculation of taxes and average tax percentage for income and corporate tax

Taxable income		Belgium		France		The Netherlands [a]		Germany	
€25,000	NP	€7,498	30%	€2,353	9%	€9,118	36%	€4,621	18%
	BLP	€6,245	25%	€8,458	34%	€6,231	25%		
€50,000	NP	€19,662	39%	€9,853	20%	€19,587	39%	€13,973	28%
	BLP	€13,995	28%	€16,915	34%	€13,506	27%		
€100,000	NP	€44,662	45%	€28,302	28%	€45,364	45%	€34,069	34%
	BLP	€30,553	31%	€33,830	34%	€28,056	28%		

Source: own calculations based on Van der Veen et al. 2002, Federal Public Service Financing 2007, Terre d'Europe 2007

[a] The Dutch taxation system knows a multitude of tax-deductible items that lower the calculated taxes

As one assumes that on fiscal grounds, the LV (Belgium) has no legal body, the LV is automatically subject to the income tax if it counts fewer than three partners or if its capital is below €30,950. In other instances, the LV may choose to pay personal income tax (progressive rate) or, conversely, corporation tax (fixed rate).

The accounting obligations differ over the different countries: in the Netherlands, every farmer is obliged to keep books. In France, from a certain turnover, PDMs have to do accounting, as in Germany where the obligation of accounting is related to size, profit and turnover (Van der Veen *et al.* 2002). In Belgium, obligations for accounting depends on the legal structure, but PDMs have to do farm economic accounting if they want to receive an installation grant. The VAT taxation is not discussed as there are limited differences between legal agricultural structures within each country.

7.2.3. Legal Liability

Legal liability is a situation in which a person is liable, and is therefore responsible to pay compensation for any damage incurred. Liability differs between the legal structures. Under the configuration of NP, the farmer has full liability. No separation between firm equity and the own property exists. Except for the LV, shareholders of BLPs have limited liability, as the firm equity and the private property are divided

(Table 7.2). The shareholders are legally responsible for no more than the amount that they have contributed to a firm (except for GAEC). In the EARL (France) and BVBA (Belgium), the liability of the partners is restricted to their capital input: the private capital is protected. In the LV, the managing partners have full liability, while sleeping partners have limited liability. However in practice, most farms – even in case of BLPs – have full liability as credit institutions will often ask personal liability for loans.

7.2.4. Land ownership

Land ownership has an influence on the legal structure and on the farm transfer. In France, Belgium and Germany, the majority of the agricultural land is leased (Table 7.5). At the moment of farm transfer or change from NP to a BLP, a new lease will start, except in the case of an LV where the lease does not change, because the managing partner is regarded as sole owner. The regulations regarding land lease and farm transfer are covered in section 6.4.3.4. In the Netherlands, the majority of the land is property owned by the farmer, which implies a high installation cost at the moment of farm transfer.

Table 7.5 Percentage of agricultural area tenant farmed (2000)

	Belgium	France	Germany	The Netherlands
Agricultural area tenant farmed	67	63	63	28

Source: European Communities 2003

7.2.5. Farm transfer

Young farm entrants are more innovative, more motivated towards the longer term, and better able to adapt new farm practices. Their entrance makes the agricultural sector more productive, competitive, and viable (Williams and Farrington 2006). In the majority of cases, young farmers enter the business by farm transfer from parents to child. The legal structure of the farm has an influence on the farm, and on the regulation of the farm transfer. The statutory Belgian regulation on inheritance states that there has to be a division of equal shares between the heirs. Due to the equal treatment of all the children within one family, the farm is not automatically kept as one single unit (in case of sole proprietorship). The farm may be split up in different smaller pieces or the successor has to compensate the other heirs, jeopardizing the viability of the farm. A similar inheritance law exists in France. The main aim of the agricultural inheritance law in Germany and the Netherlands is to maintain sustainable agricultural enterprises. In general, the unity of the farm is preserved and the property is transferred to one heir and the other heirs receive no compensation

from the successor although regional differences exist. However, in many cases the parents try to compensate the other heirs (Van der Veen *et al.* 2002).

In a BLP, the workable unity of the farm is preserved and shares are equally divided among the children. BLP facilitates the association of different generations (parents-children), which can allow for improvement in farming conditions (grouping of resources, sharing of working time), especially in France and Belgium. A 'maatschap' can also have this aim without being a BLP.

In Belgium, a farm transfer under 'maatschap' or sole proprietorship involves that all aspects of the farm have to be transferred separately. In most cases, first the moveable property is transferred and later the immoveable property. Within BLP, only the shares have to be transferred at the moment of farm transfer, which implies that the administrational burden at farm transfer is limited. The firm will live on and is not crumbled (Vrijens *et al.* 2006). BLP ensures the lasting nature of the structure by means of a more gradual transmission of elements within the farm. In Belgium, the LV will ease the process of farm transfer compared to a 'maatschap' or sole proprietorship. In the Belgian 'maatschap', the administrational burden is high both at the moment of installation and farm transfer. This double administration does not occur in a LV. In a LV, the transfer tax of 10.0 per cent has not to be paid, only the shares have to be transferred. The Dutch 'maatschap' is also exempted from transfer tax.

In the Netherlands, it is for successors of single holders difficult to transfer a farm unit as a whole due to high fiscal consequences. This fiscal burden is prevented if a 'maatschap' exists longer than 3 years. In the Netherlands, the economic size of the farm is usually sufficient to offer the successor an official status in the farm as 'maatschap'. In a 'maatschap', a successor can already benefit from a number of fiscal facilities. In a Dutch BLP, high farm investments bring along lower profits, by which the benefit of the corporate tax is lower, compared to the 'maatschap'.

In France, a GAEC is suitable (1) to create an association among people still far from retirement, or among two people wishing to start up together, (2) to facilitate gradual transmission of capital within family based GAEC and (3) to give priority to remuneration of work compared to that of capital. An EARL enables installation between spouses and between parents and children, but this advantage is counterbalanced by increased taxes.

The type of installation grants given in the different European countries varies according to the interpretation of the European regulation nr1257/99 on rural development (Van der Veen *et al.* 2004). In the different countries, a number of facilities for lower installation costs exist, but they are not directly linked with the legal structure of the farm. A number of facilities exist to build up equity before farm transfer. In France, the system of differed wages is applied irrespective whether the successor has an official status, while in the Netherlands, the successor in a

'maatschap' can already benefit from measures targeted at entrepreneurs before the actual take-over (e.g. start allowances). In Germany, no facilities are provided for building up equity before farm transfer.

7.2.6. Advantages and disadvantages of business legal structures in Belgian agriculture

The comparison of legal structures in Belgian agriculture and its surrounding countries makes clear that the Belgian legal structures have advantages and disadvantages (Table 7.6). On fiscal grounds, a NP can choose between a fixed taxation system or a taxation system based on proven results and costs. The fixed system is not profitable for all PDMs, but it lowers the administration and has no accounting obligation. Contrary to the Belgian situation, the French income tax is on average lower than the corporate tax. The French BLP who are exclusive for agricultural purpose, are taxed as NP, and benefit from relatively low tax rates. They have also the advantage of the limited liability, which is not the case for the Belgian LV.

Table 7.6 Advantages and disadvantages of legal structures in Belgium

Natural person (NP)	Business entity with legal personality (BLP)
- Limited life time	+ Unlimited life time
+ One manager: uncomplicated decision-making	- Different people are involved in the management
+ Less accounting and administrative obligations	- Accounting and administrative obligations
- High financial risk	+ Limited financial risk
- Income taxation has higher taxation rate than corporation tax	+ Corporation tax has lower taxation rate than income taxation
+ High autonomy	+ Number of people can collect the necessary capital
- Complex transfer of the farm	+ transfer of shares at the moment of farm transfer
	- Corporate capital has to be paid up in full

The regulations for the Belgian 'maatschap' are less profitable than for the Dutch 'maatschap', because of an administrative burden at the moment of foundation, and at the moment of farm transfer. The transfer taxes are also not lower in Belgium as it is the case in the Netherlands for a 'maatschap' that exists for more than 3 years. Within the LV taxes cannot be transferred. The LV has the advantage that in some

cases (fewer than three partners or if its capital is below €30,950) the farmer can choose between income tax and corporate tax. A disadvantage is that European subsidies within the corporate tax have to be taxed at 33.99 per cent instead of the 16.50 per cent in income tax. The BVBA has limited liability, but the corporate capital is considerably higher than for LV.

7.3. Methodology

7.3.1. Hypotheses

The relation between the knowledge and the attitude towards different legal structures in Belgium makes clear if farmers misperceive alternative legal structures. The following hypotheses are stated:

> *10. A limited knowledge of legal configurations is a major obstacle in a positive attitude towards other legal constructions*
>
> *11. PDMs perceive the natural person configuration as being better than the business entities with separate legal personality*
>
> *12. Business entities with separate legal personality are reserved for a limited group of farms that have a well-considered idea of the future*

7.3.2. Data

7.3.2.1. Data collection

In order to test these hypotheses, data were collected during the Flanders' agriculture fair at the beginning of January 2005. This is a general fair frequented by the majority of Flemish farmers. Visitors to this fair were asked to complete a questionnaire related to types of firms (Appendix 2). More then 280 farmers completed the form, of which 268 questionnaires were usable and thus withhold for further analysis. 12 per cent of the questionnaires were only partially filled out. The sampling technique was based on non-probability sampling in which the participants of the fair were asked in the first place if they are farmer or not. In case of a positive answer, they were asked to fill out the questionnaire. Approximately 70 per cent of the approached farmers were willing to do so.

The survey related to the legal farm structure was time and cost effective. On a couple of days all data were collected. However, a limitation of a questionnaire on an agricultural fair is that not all people are motivated to complete a survey. This is overcome by a clear introduction of the questionnaire to the people who declared to be farmer. Furthermore, a quiet atmosphere was created and the respondents got an incentive at the end.

Table 7.7 gives an overview of the main characteristics of the respondents related to the legal structure of their farm. In the questionnaire, 92.2 per cent of the farmers (N=212) work as NP of which 13.1 per cent was not aware of the own legal structure. This approaches the 92.9 per cent of the 34,410 Flemish farms which according to official statistics had in 2005 the NP as legal structure, but the fact that they ignore actual status makes them with a high probability NP. Only 7.8 per cent of the respondents has a BLP as legal structure. This is a relative low number, but it corresponds to the 6.8 per cent of farms in Flanders who in 2005 worked under BLP (Federal Public Service Economy SMEs Self-employed and Energy 2006).

Table 7.7 Main characteristics of survey respondents

	NP	LV	BVBA	Other BLP	Legal structure unknown	F-value / Likelihood ratio
N	212	11	5	5	35	
Average farm size (ha)	32.26	51.73	32.36	115.00	29.94	3.332 *[a]
Average full time labour units	1.6	1.9	1.4	2.1	1.6	0.727 [a]
Average year of birth	1961	1963	1963	1958	1963	1.397 [a]
Education level (%)						8.914 [b]
Primary school	7.5	9.1	0.0	20.0	2.9	
Secondary school	74.5	63.3	60.0	40.0	85.7	
Higher education	18.0	27.3	40.0	40.0	11.4	
Designation of farm successor (%)						3.239 [b]
Farm successor designated	21.7	27.3	40.0	40.0	25.7	
No farm successor designated	19.3	9.1	20.0	20.0	22.9	
Farm successor not yet designated	59.0	63.3	40.0	40.0	51.4	

Source: questionnaire related to legal farm structures
*: significant difference between group at 0.05 level
[a] : F-value
[b] : Likelihood ratio

7.3.2.2. Questionnaire

The questionnaire related to the business legal structure of the farm (Appendix 2) was held during a general agricultural fair. This requires a short questionnaire that can be filled out in a limited amount of time. The survey asks about the knowledge and perception related to different legal farm statuses in Belgium.

The first part asks for some general farm characteristics (farm size, farm type, number of full time labour units, age, education, children, succession, tax system). With this information, a general picture of the farm can be drawn. Furthermore, the importance of some farm objectives are asked for.

The second part deals with the knowledge level of different kinds of legal configurations in Belgium. The respondents are asked if they know these legal structures, whether these exist in Flanders and typically on what kind of farms. Respondents are asked to express their opinion on three important legal structures.

The third part focuses on the perception of farmers related to the legal farm status. Answers are given on a 7-point Likert scale. Seven characteristics of legal farm statuses are given for both the natural person and business entities with separate legal personality (BLP). This makes a comparison between the two major groups of legal farm statuses possible.

The fourth part is related to the own agricultural firm. The legal farm status is asked for, together with the time that the PDM is already working in this farm status. Some questions are related to the motivation of this kind of agricultural firm. The last questions of this part is related to possible future changes in this status.

In the last part, questions are related to the information gathering of farmers, with first some general questions related to information collection on legal farm structures, and than the focus is put on information collection with respect to the possible changes in the own farm status.

7.3.3. Methodological framework

The objective of our empirical research is to analyse the perception and motivation of PDMs related to different legal farm structures in Belgium. The relation between attitude and the characteristics of legal structures are studied by means of the framework in Figure 7.2. Knowledge and perception of legal structures are the basis of motivation related to the own legal structure. The attitude towards legal structures in general is influenced by the motivation of the own legal farm, and by the perception and knowledge of the legal structures. Based on the convergence or divergence between the attitude towards legal structures and the characteristics of the legal structures, farmers are clustered according to possible policy measures.

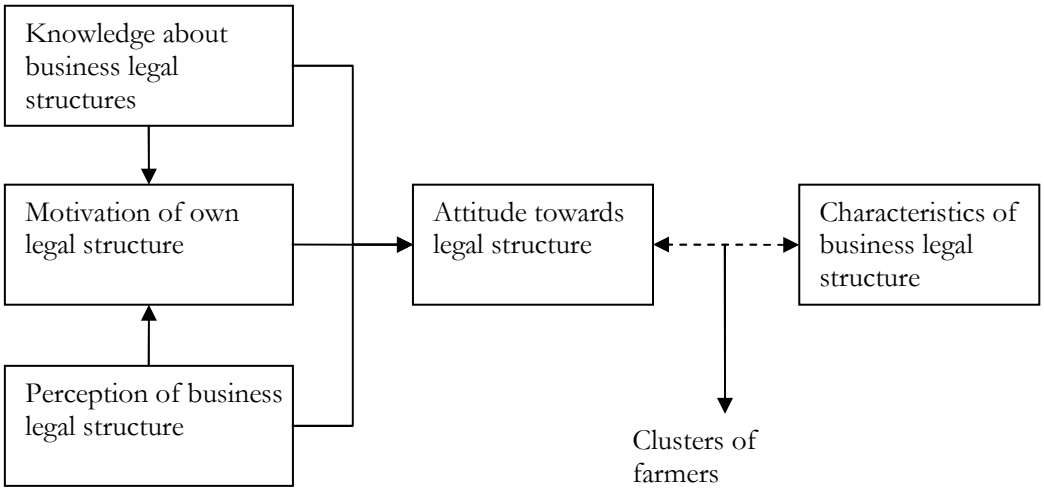

Figure 7.2 Framework of attitude and characteristics of legal structures in agriculture

Source: own compilation

7.4. Empirical results

7.4.1. Knowledge of legal structures in agriculture

The motivation and attitude of farmers towards legal structures is related to their knowledge of the different legal structures. The circulation of information about the different legal structures in Flanders is limited, which is reflected in the knowledge level of legal structures (Figure 7.3, Table 7.8). The knowledge level (Figure 7.4) is a compound indicator derived from processing the answers of a limited number of questions measuring the knowledge of different aspects of BLPs. About 30 per cent of the farmers has a low level of knowledge (knowledge level <=2) about alternative legal structures in agriculture. In particular, limited knowledge is present on farm transfer aspects and on rules to set-up an alternative legal structure. Farmers are familiar with the fact that the NP has unlimited liability but the unlimited liability of managing partners in the LV does not make part of common knowledge. The fiscal regulations for the LV are unknown. Most farmers do not know that within this legal structure, farmers can opt for different taxation systems, giving the farmer more freedom to adapt the fiscal regulations to the farm situation. Related to the fiscal regulations, the accounting requirements of the BLPs are also unclear. Farmers are aware of the subsidy regulations within the LV. Our first conclusion is that the apparent lack of knowledge about BLPs is certainly an inhibiting factor for farmers to consider whether BLPs are applicable to their farm.

Table 7.8 Correct knowledge about different aspects of legal structures (% of respondents who respond correctly)

	NP	LV	BVBA
Taxation	49.6%	13.8%	31.1%
Accounting	n.a.[a]	10.8%	56.0%
Legal liability	45.9%	20.9%	n.a.
Farm transfer	17.5%	n.a.	n.a.
Installation of BLP	n.a.	17.5%	25.7%
Subsidies	n.a.	51.9%	17.5%

Source: questionnaire related to legal farm structures
[a] n.a.: not available

The knowledge on different legal structures in agriculture is relatively low for farmers operating under NP configuration. In general, these farmers do not search for information about other legal structures. Even the knowledge on the legal structure of the own farm is limited. Farmers operating a farm under BVBA have a much higher level of knowledge. These farmers have selected the legal structures that suited best their needs. They are able to compare the different legal structures on an objective basis. Within the LV, the knowledge of the own legal structure is high, but contrary to the BVBA, their knowledge about other legal structures is low.

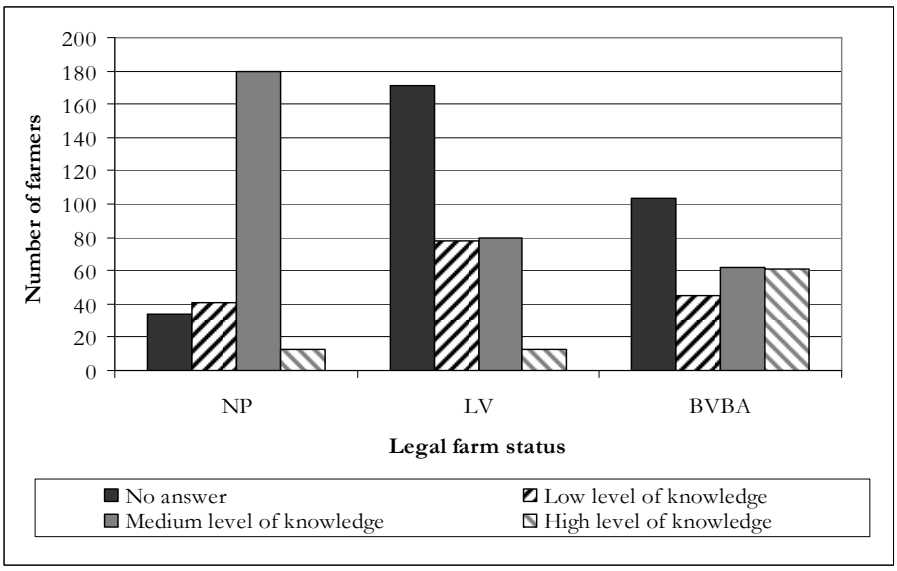

Figure 7.3 Knowledge of farmers regarding different legal structures in agriculture
Source: questionnaire related to legal farm structures

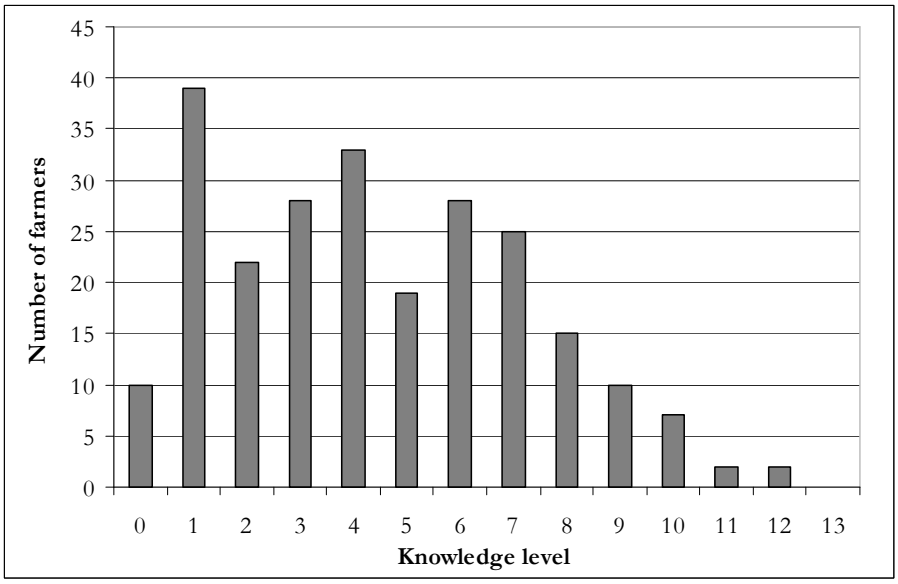

Figure 7.4 Total knowledge level of BLP among surveyed farmers (scale: 0 (no knowledge) - 13 (perfect knowledge))

Source: questionnaire related to legal farm structures

In total, only a limited group of farmers has full insight in the different legal farming structures. On the basis of the available information, they are able to choose the legal structure that suits best their farming needs. Besides, a large group of farmers has only a limited knowledge of the different possibilities and consequences of legal structures. As a consequence of their ignorance, most of them continue farming in sole proprietorship.

7.4.2. Perception of legal structures in agriculture

Not only the objective knowledge of different legal structures will influence the attitude of farmers towards legal structures. Also the farmer's subjective perception of both NP and BLP has an influence on the farmer's opinion concerning legal structures (Table 7.9).

PDMs who run their farm as NP, do not perceive a difference in the importance of management skills between running a NP or a BLP. For all legal structures, good management skills are important. On average they also do not see an explicit difference in capital requirement among the different legal structures. In their perception, capital is important but no extra capital is needed when a farm is exploited under BLP configuration. Although, corporate capital is an essential condition to adopt BLP (Table 7.2). PDMs recognise that BLPs are more profitable from fiscal point of view, and reduce the financial risks. On the other hand, farmers have the impression that the NP configuration is a more flexible and a legally less

complex form than BLP. This makes farming as NP relatively easier to administer than BLPs. But in the opinion of most PDMs, a major bottleneck for BLP in Flemish agriculture is the extensive administration, which is in line with legal complexity and perceived lower flexibility. Fiscal advantages are not perceived of major importance, although a considerable tax difference between the legal structures exists (e.g. Table 7.4).

Table 7.9 Farmers' perception of the characteristics of legal structures [a]

	NP	BLP	Paired sample T-test
Intensive management	0.53 (1)	0.48 (2)	0.279
High financial risk	0.44 (2)	0.22 (5)	-2.097 *
High administration	0.39 (3)	0.65 (1)	-2.713 **
Capital intensive	0.31 (4)	0.38 (4)	1.045
Flexible farm structure	0.17 (5)	-0.13 (7)	3.200 **
Legally complex	0.04 (6)	0.47 (3)	3.321 **
Fiscal advantages	-0.25 (7)	-0.04 (6)	-1.995 *

Source: questionnaire related to legal farm structures

[a] Figures are standardized values of a seven point scale measurement. Between brackets the rank order of the characteristic is given

**: significant difference between groups at 0.01 level

*: significant difference between groups at 0.05 level

Explanation for the limited observed transition to BLPs in Flemish agriculture can be found in the perception of a more complex administration, the legal complexity and the perceived lower flexibility, while fiscal advantages are not highly perceived.

7.4.3. Motivation for the own legal structure

The knowledge and the perception of farmers towards the different legal structures can be related to the choice of the legal structure for the own farm. Such analysis can reveal why farmers are adopting their current legal structure, and which opportunities and threats of this form are recognised.

Farms working under the NP structure continue to do so mainly because of tradition. The current rules regarding government support to invest seem to be an incentive to continue the current management under NP, although the rules do not discriminate the LVs in this respect. Firms under BLP attach a high importance to the limitation of fiscal motives and financial risk to adopt the present legal structure.

Government support rules and the high administration are a burden for farmers operating already under BLP. In theory, the farm transfer under BLP should occur more fluently than under NP structure, but farmers under NP indicate that a fluent transfer of the farm is a positive incentive to stay in this structure. A fluent farm transfer is important for BLPs, but apparently not the main reason to adopt this form (Table 7.10).

Table 7.10 Reason for having own legal structure [a]

	NP	BLP	F-value
Tradition	0.47 (1)	-0.11 (4)	6.479*
Easy to receive government support	0.27 (2)	-0.16 (5)	4.435*
Fluent transfer of the farm	0.01 (3)	0.11 (3)	0.436
Fiscal advantages	-0.14 (4)	0.33 (1)	7.459**
Limited administration	-0.19 (5)	-0.46 (6)	1.980
Limitation of financial risk	-0.43 (6)	0.27 (2)	12.987**

Source: questionnaire related to legal farm structures

[a] Figures are standardized values of a five point scale measurement, between brackets the rank order of the characteristic is given,

**: Significant difference between groups at 0.01 level

*: Significant difference between groups at 0.05 level

The involvement and importance attached to legal structures is also reflected in the information collection intensity about BLPs. Our results indicate that farmers in BLP have attended more regularly workshops about other legal structures than NP farmers (BLP: 77.3%; NP: 48.4%). They also discuss the subject more frequently with extension officers (BLP: 85.7%; NP: 60.2 %).

Although the shift of legal structure is not always obvious, 30 per cent of the respondents has already thought of and considered the possibility of adopting another legal structure. NPs who have already considered to switch to another legal structure, indicate to be less bound to the present NP structure because of regulations with respect to government support or the persistence to the current legal structure than those who have not yet considered a switch.

7.4.4. Cluster analysis

The results presented show that only a limited number of Flemish farmers has an open mind towards new legal structures for farming. On the other hand, not all farmers would benefit from a new structure. A major bottleneck is the lack of

knowledge and information. Information and promotion of legal structures should target the sensible group of farmers.

To identify the sensible target groups, the surveyed farmers are clustered. Based on a hierarchical clustering, 3 clusters are restrained. A K-means cluster analysis divided the respondents into 3 clusters according to their objective knowledge, the subjective perception of the two main structures (NP and BLP), and the intensity of the information search.

- The objective knowledge is measured through the total knowledge level of legal structures (including NP and BLP) that is based on the questions related to the knowledge regarding the different legal structures (Table 7.8).
- The subjective perception measures the relative advantage of the NP configuration in comparison with BLPs (Table 7.9).
- The information search collection related to BLPs is based on the intensity of the information search through different channels.

Table 7.11 provides the descriptive statistics, the measures of central tendency and the measures of dispersion of the variables. Table 7.12 gives the correlation matrix of the three variables used for the cluster analysis.

Table 7.11 Descriptive statistics of the variables of the cluster analysis

Variable	Mean	SD	Minimum	Maximum
Objective knowledge (scale: 0-30)	13.58	7.58	0.00	27.00
Subjective perception (scale: -36 - +36)	0.34	4.02	-15.00	20.00
Information search (scale: 0-8)	3.11	1.89	0.00	8.00

Source: questionnaire related to legal farm structures

Table 7.12 Correlation matrix of the independent variables of the cluster analysis

	Objective knowledge	Subjective perception	Information search
Objective knowledge	1.000		
Subjective perception	0.073	1.000	
Information search	0.214 *	-0.031	1.000

Source: questionnaire related to legal farm structures
*: significant at 0.05 level

By means of these three independent variables, a cluster analysis is performed. Table 7.13 indicates the importance of perception within the different clusters.

Table 7.13 Analysis of variance of the different clusters, related to the perception of legal characteristics[a]

		Cluster 1: Directed towards NP	Cluster 2: Conservative farmers because of ignorance	Cluster 3: Open-minded towards BLP	F-value
NP	High administration	0.272	0.535	0.422	0.895
	Intensive management	0.552	0.696	0.441	2.012
	Flexible farm structure	0.357	0.124	0.099	1.329
	Legally complex	-0.311 a	0.125 b	0.184 b	3.635*
	Fiscal advantages	-0.026 b	-0.213 ab	-0.447 a	3.810*
	Capital intensive	0.013 a	0.188 a	0.563 b	5.310**
	High financial risk	0.080 a	0.303 a	0.703 b	5.437**
BLP	High administration	0.813 b	0.319 a	0.689 b	4.332*
	Intensive management	0.667 b	0.198 a	0.519 b	4.093*
	Flexible farm structure	-0.409 a	-0.155 a	-0.004 ab	4.395*
	Legally complex	0.874 b	0.474 a	0.190 a	8.564**
	Fiscal advantages	-0.362 a	-0.156 a	0.187 b	6.233**
	Capital intensive	0.739 c	0.413 b	0.093 a	9.553**
	High financial risk	0.455 b	0.193 ab	0.076 a	3.398*

Source: questionnaire related to legal farm structures
[a] Figures are standardized values of a five point scale measurement
**: Significant difference between groups at 0.01 level
*: Significant difference between groups at 0.05 level

Table 7.14 shows the basic characteristics of the three restrained clusters. All surveyed farmers are included in this analysis.

Table 7.14 Cluster characteristics

	Cluster 1: Directed towards NP	Cluster 2: Conservative farmers because of ignorance	Cluster 3: Open-minded towards BLP
Objective knowledge indicator	+ +	0	+
Subjective perception indicator	+	0	-
Information search indicator	+	0	+
Number of farmers	40	91	95

Source: questionnaire related to legal farm structures

- The cluster of 'directed towards NP' is the smallest group of farmers. They are in general well informed on and have high objective knowledge of the different legal structures. According to their opinion (Table 7.13), the NP has more advantages than BLPs because of lower financial risks, lower capital requirement, lower administration, more flexibility and being legally less complex. This group consists only of farmers under NP. These farmers have made a conscious choice and will only change their legal structure in the future if other legal structures would present objective advantages.
- The second cluster - conservative farmers because of ignorance - is a larger group of farmers characterised by a very limited objective knowledge of the different legal structures. As a consequence of their ignorance, they are not able to indicate the difference between NP and BLP. Their subjective judgement on administration and management efforts of BLPs is significantly lower, probably because of a lack of information. Farmers belonging to this cluster use significantly more the fixed tax declaration system (Pearson χ^2: 6.770, p-value: 0.034), and are less interested in information regarding alternative legal structure for their farm (Pearson χ^2: 3.019, p-value: 0.051). All these elements can be influenced by the relatively lower level of education of this group of farmers (Pearson χ^2: 10.324, p-value: 0.035). This group needs to be better informed.
- The third cluster consists of open-minded farmers towards BLPs. This cluster has about the same size as the second cluster. The objective knowledge of these farmers is relatively high. They transform this knowledge into a more negative perception of NP in relation with BLPs. To build up a family farm is a less important objective for this group that attaches more importance to economic results. The NP is according to these farmers not profitable from fiscal perspective, is capital intensive and involves high

financial risks. These farmers use more frequently the income tax system based on proved returns and costs and have looked already to the consequences of changing to an alternative structure for their own farm (Pearson χ^2: 3.019, p-value: 0.051). Their interest for BLPs is probably influenced by a higher level of education (Pearson χ^2: 10.324, p-value: 0.035). This group of farmers should be the preferential target group for further information and targeted promotion in the sense that for these farmers it is important to compare the advantages of legal structures in their specific case. In particular at the moment of farm transfer, this group can benefit from looking at other options than the NP.

7.5. Conclusions

So far, as in other Western European countries, except France, BLPs play only a minor role in the Flemish agriculture and horticulture (6.8 % of Flemish farms). Although these legal structures may have advantages for farm transfer, legal liability and fiscal grounds, they are not popular. Main hypothesised reasons were lack of knowledge, insufficient (perceived) advantages and lack of knowledge about the consequences for their own situation.

On theoretical grounds, the Belgian fiscal regulation entails high tax rates, both for NP and BLP. Contrary to the Belgian situation, the French income tax is on average lower than the corporate tax. The French BLP that are exclusive for agricultural purpose, are taxed as NP, and therefore benefit from relatively low tax rates. They also have the advantage of the limited liability, which is not the case for the managing partners in a Belgian LV. The regulations for the Belgian 'maatschap' are less profitable than for the Dutch 'maatschap'. The LV has the advantage that in some cases (fewer than three partners or if its capital is below €30,950) the farmer can choose between income tax and corporate tax. A disadvantage is that European subsidies within the corporate tax have to be taxed at 33.99 per cent instead of the 16.50 per cent in income tax. The BVBA has limited liability, but the corporate capital is considerably higher than for LV. In Belgium, the alternative legal structures in agriculture seem therefore to have fewer advantages to the farmers than in the neighbouring countries. In the first place, public authorities should reconsider the legal structures in agriculture and try to optimise them to the needs of the farmers, in order to make them more competitive in the European market. Related to farm transfer, the choice of an appropriate legal structure influences the ease of farm transfer. As example, a BLP entails that only the shares have to be transferred at the moment of farm transfer, limiting the administration, but a successor has to be open towards alternative legal structures.

A survey among Flemish farmers reveals that the knowledge of legal structures is limited, confirming hypothesis 10. Also hypothesis 11 is confirmed as the perception

of natural person (NP) versus business entities with separate legal personality (BLP) is often in favour of the NP. Most farmers have no idea of the consequences of the implementation of a BLP for their own farm.

The objective knowledge of different legal structures, the subjective perception of the farmer, and the intensity of information collection build up the general attitude towards legal structures. Combining these three aspects, three groups of farmers can be distinguished of which only one group has an open mind towards BLP (42 %). The other groups will remain in the NP structure, although for different reasons. A smaller group has a good objective knowledge of legal structures, but judges that the NP is the best legal structure for their family farm (18 %). A larger group however opts for the sole proprietorship as a consequence of their ignorance of the existence and possibilities of other legal structures (40 %).

In general, more information on legal structures is needed. Extension services should explain more clearly and on an individualised basis the consequences of different structures. Information on legal structures should also be incorporated in agricultural education and agricultural post school courses.

Farmers operating under the NP structure acknowledge the fiscal and property advantages of adopting BLPs, but the complexity of these forms, both in administration and legislation, limits the transition to alternative legal structures. Farmers already working under BLP acknowledge the advantages of this legal structure, but are not stuck to this form and are flexible to change if this would improve their situation. There seems to be scope for further adjustment and improvement of the legal structures in agriculture, taken into account the Dutch and French example. Nevertheless, BLPs are and will mainly be adopted by farmers who are able to evaluate all effects of alternative legal structures and for whom the higher administrative burden is compensated by a lower financial risk and other advantages, which confirms hypothesis 12.

The results therefore hold important lessons for the public authorities. BLPs are perceived as entailing a high administrative burden. The fiscal and other advantages are not clear or pronounced. In particular, the fact that the LV – specially designed for farms – is not very well perceived is illustrative for this. Public authorities may therefore take stock of these results and try to adapt this specific form or create a new form more adapted to the needs of farms. For example, the high capital needs of the contemporary family farm can be fulfilled by the input of external capital of sleeping partners, and this could be stimulated by fiscal advantages. Moreover, more efforts on informing farmers have to be made in order to decrease the barrier of transition.

Chapter 8 – General discussion and conclusions

In Flemish agriculture, the family farm is seen as the cornerstone of the agricultural society. Statistics indicate that 87 per cent of the farms are family farms. Although the total number of farms has halved over the last 20 years, the relative share of family farms holds. Farm transfer is of major importance for the continuation of family farms, and has been highlighted in the first axis of the European Development policy 2007-2013 and in national policy mission statements such as in the policy letter of the Flemish minister of Agriculture. Therefore it is important to focus on the process of transfer of family farms, the influence of the social, economic and legal context on farm transfer, and the implications on financing farm transfer and farm practice.

In most literature, the farm transfer is studied as a single process that last for a limited number of years. Such a point of view does not take into account the dynamics of the whole farm life cycle. The preparation of a new farm transfer starts already when the previous farm transfer is finished, as the family business includes different generations. Moreover, it is not a process that only is related to e.g. economic aspects; it is a process that takes into account social, economic, and legal aspects. The farm succession cycle model, proposed in this research, enables us to include all these aspects within a single framework (Figure 8.1).

The farm succession cycle starts with the motivation and intention of farmers' children to continue the family farm. The majority of them exit the succession cycle in one of these first stages, due to different reasons such as no interest in farming or limited farm viability. The next stage of the succession cycle is related to the economic context of the family farm. The investment decisions of the PDM before farm transfer are linked to the designation of a successor and determine the feasibility of farm transfer. The timely designation of a successor stimulates the PDM to further develop the farm to maintain a viable farm business. The influence of the timely designation of a successor on the investment decisions is referred to as the pre-succession effect. The next stage of the farm succession cycle is the farm transfer. The farm transfer includes the processes of farm succession, farm inheritance and farm retirement. In some cases a direct farm transfer is realised, but in the majority of cases a gradual farm transfer is preferred. The way the farm is transferred has financing implications and determines the investment possibilities after farm transfer. But also the timely designation as successor influences the investment decisions of the family farm after farm transfer. We refer to this concept as the post-succession effect. In the following years, the family situation determines whether a possibility of future intergenerational farm transfer exists. A new farm succession cycle starts. During the whole farm life cycle, the legal farm status will determine the farm management, and it has a major influence on farm transfer.

Different business legal farm structures have different implications on the family farm business, also during farm transfer. The PDM has to choose the best legal farm structure for his farm in order to ensure farm continuity in the future.

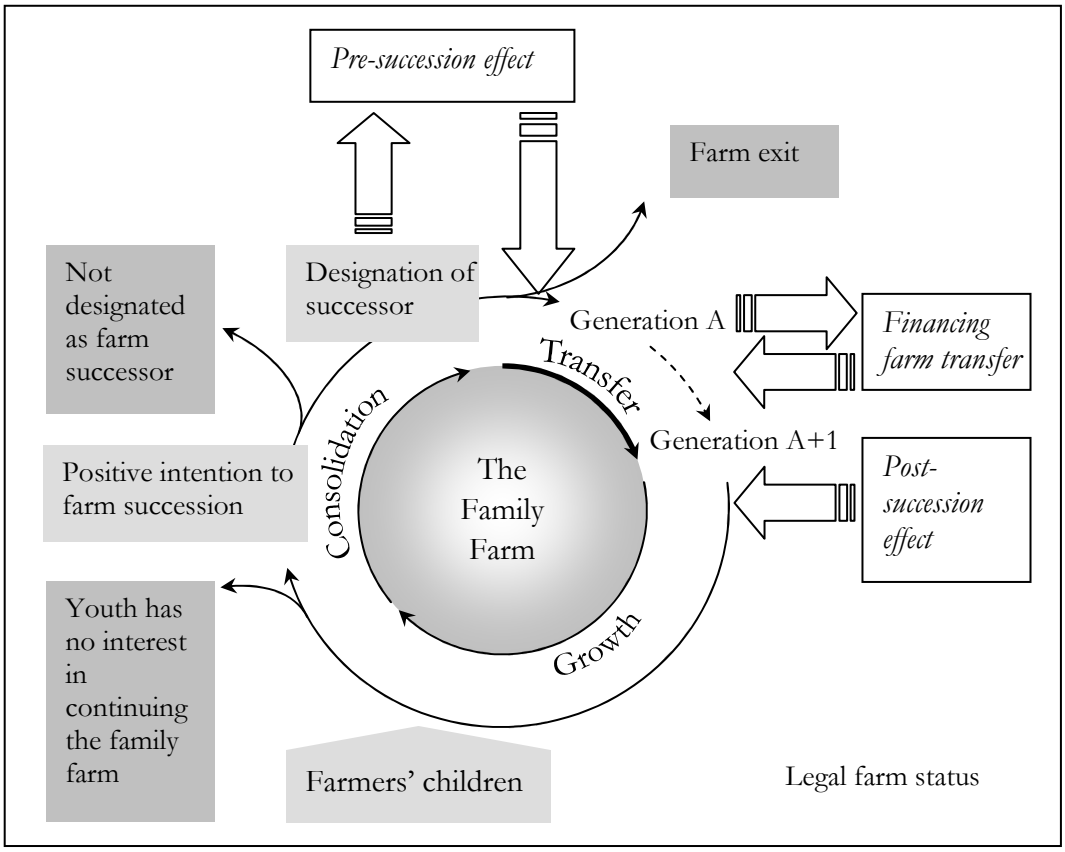

Figure 8.1 Conceptual framework: the farm succession cycle model

Source: own compilation

This research has contributed to the state of the art related to farm succession by enlarging the point of view to a long term approach, and by simultaneously highlighting the importance of the social, economic and legel aspects. In the following sections, we discuss these different aspects of the farm succession cycle, state our general conclusions and make recommendations for further research.

8.1. The social aspects of farm transfer

The social aspects of farm transfer is related to the different aspects of the human environment that influence the farm succession. Not only the economic viability of the farm as such, but also personal opinion, perceptions and objectives play a major role in the decision to continue the family farm. The succession intention model

developed in this research combines personal considerations, the social environment, the farm environment and external influences. Based on this general concept, the succession intention model shows that a family-minded attitude related to farm succession and a positive assessment of policy limitations are the main determinants for a positive intention towards farm succession. In a next stage, farm growth limitations and the family related arrangements related to farm transfer become decisive in whether the potential successor is designated as farm successor.

As the main objective is to transfer viable and competitive family farms, we do not intend to stimulate the transfer of all family farms. This implies that related to the stimulation of farm transfer, not all farmers' children should be focussed at, but a limited group of farmers' children can be targeted to increase the number of possible successors. The target groups of farmers' children can be obtained by clustering potential farm successors based on their perceptions and objectives related to farm succession. Specific policy recommendations focusing at the different groups may help potential farm successors to take over the family farm:

- Transparency of policy regulations related to farm transfer can improve the perception of farmers' children related to farm succession. Simplification of farm administration and (environmental) regulations can raise the number of farmers' children with a positive intention to farm transfer. An accessible farm succession policy can diminish the perceived policy related difficulties related to farm transfer.
- Clear information related to legal farm structures helps young farmers to consider what kind of legal farm structure fits best the needs of the farm, taken into account the farm-family relation and without laying a burden on the family. Agricultural education and extension services (at personal level) have to give sufficient attention to the characteristics and consequences of legal farm structures.
- Due to the lack of available agricultural area, potential successors envisage problems to expand the farm in the future. Agricultural policies have to stimulate the withdrawal of land use of PDMs without succession perspectives above the retirement age. The released agricultural land should become available for competitive PDMs in order to increase the production. A better functioning of the land market and specific support for young farmers who need land to expand their farm to be viable, may help to increase succession in case where land availability is a problem. For example, the stimulation of withdrawal of land use can be done through financial incentives, and young farmers can have preference to the released agricultural area.

Focusing on these aspects can improve the social aspects of farm transfer: some farmers' children will have less social constraints related to farm transfer. But it has

to be stated that only a part of all farmers' children is motivated to continue the family farm, but those who are interested might be stimulated by the above stated policy recommendations. An important task is also reserved for the agricultural education. They have to give more attention to farm transfer and the different regulations in the school curricula.

8.2. The economic aspects of farm transfer

As the main objective of the family farm is to execute an economic activity on the farm and to earn a living for the family, the economic aspects are decisive in farm transfer. The farm management decisions, and in specific investment decisions, are linked to the stages of the farm life cycle. However in the consolidation and exit stage of the farm life cycle, the timely designation of a successor has a major influence on the investment decisions of the farm. This reflects the relationship between the long-term orientation of the farm and its current management.

The timely designation of a successor stimulates the farm investments in order to transfer a viable farm to the next generation. A lack of successor tends the PDM to focus on farm exit and no new farm investments are made in order to reach the value of liquidation.

In literature, the indicators to study this economic context of farm transfer are mostly related to farm size and farm income, but we argue that these are not the best indicators at the end of the farm life cycle. This research introduces the Total Farm Assets (TFA) as indicator for farm management decisions at the end of the farm life cycle, and shows that in the Flemish situation, a timely designated successor stimulates investment decisions, while a lack of designated successor does not give the extra stimulus. The TFA will increase if farm investments are made, and if own capital or external financial sources can support this farm expansion. The fact that the successor is timely designated or uncertain stimulates farm development by the PDM. We refer to this effect as the pre-succession effect.

Also after farm transfer, the timely designation of a successor is still perceptible in the investment decisions. Both farms where the successor was timely designated or uncertain do have higher growth rates of TFA after farm transfer than farms that were still transferred even if till the last year before farm transfer no successor was designated. It shows that the timely preparation of the successor is also a decisive factor in a successful farm continuation. Even if uncertain, successors who envisage succession are better prepared than those who only at the last moment decide. This effect is referred to as the post-succession effect.

The combination of the pre- and post-succession effect indicates that the group of farm successors, who only decided at the last moment, will find it hard to catch up with the other groups of farmers regarding TFA. But also the successors who were

not yet designated before farm transfer can on average not bring their TFA to the same level as the group which timely designated successors. The future farm vision of the PDM has consequences for the current and the next farm life cycle. Therefore it is important to make some policy recommendations. At present, policies focus at the start of the farm business and try to stimulate and help the successors during and after farm transfer, but our results indicate that the end of the farm life cycle is also of major importance for the future viability of the farm. Governmental policies and extension services can highlight the importance of a timely decision related to farm succession and the consequences on the farm development, in order to increase the awareness of the importance of a timely designation of the farm successor and to stimulate the pre-succession effect.

At the moment of farm transfer, the financing is a crucial aspect within the farm succession cycle. External sources of financing are used to cover the financial costs of farm transfer, but the extent of these external sources depend on the type of farm transfer (gradual or direct farm transfer), the obsoleteness of the farm and the solvency of the leaving PDM. At present, agricultural policy focuses at the moment of farm transfer by means of establishment and investment support. But these VLIF support measures are more than a stimulus: they determine the timing, amount and price of farm transfers. As the maximum amount for establishment support by VLIF does not take into account the real present value of the family farms, it stimulates a gradual farm transfer of larger family farms. A considerable amount of owner's equity is needed to get loans from the bank, and in general young farmers will need the financial help of family members to be able to take over the family farm. As this (gradual) transfer of the family farm takes a number of years, clear arrangements should be made between all involved parties in order to finish the process in a harmonious way.

8.3. The legal aspects of farm transfer

The majority of the Flemish family farms are farms in sole proprietorship. A comparison of the different legal structures in Belgium, the Netherlands and France shows that alternative legal structures in Belgium seem to have fewer advantages to the farmers than in the neighbouring countries. There seems to be scope for further adjustment and improvement of the legal structures in agriculture, taken into account the Dutch and French example. So in the first place, public authorities should reconsider the legal structures in agriculture and try to optimise them to the needs of the farmers, in order to make them more competitive in the European market.

Within the Belgian context, the family farm in sole proprietorship has some disadvantages related to e.g. taxes, personal liability and farm transfer, compared to different forms of business entities with separate legal personality (BLP). In the ideal situation, farmers should be able to choose the legal farm structure that fits the best

their personal farm situation. In reality however, the objective knowledge of the different legal structures is insufficient to make a considered choice and subjective perception of the farmer enhances this process. In particular, BLPs are perceived as very administrative. The fiscal and other advantages are not clear or pronounced. In particular, the fact that the LV – specially designed for farms – is not very well perceived is illustrative for this. Public authorities may therefore take stock of these results and try to adapt this specific form or create a new form more adapted to the needs of farms.

In general, farmers operating under the NP structure acknowledge the fiscal and property advantages of adopting BLPs, but the complexity of these forms, both in administration and legislation, limits the transition to alternative legal structures. Farmers already working under BLP acknowledge the advantages of this legal structure, but do not stuck to this form and are flexible to change if this would improve their situation.

Depending on the farm situation, a considered choice has to be made between sole proprietorship, and a specific kind of BLP. In spite of it all, BLPs are and will mainly be adopted by farmers who are able to evaluate all effects of alternative legal structures and for whom the higher administrative burden is compensated by a lower financial risk and other advantages. On the other hand, more efforts on informing farmers could be made in order to decrease the barrier of transition: this is a task of both the extension services as the agricultural education.

8.4. General conclusions and further research

Farm transfer is not obvious in the current society. It is a complex long term process that is capital intensive, takes a lot of administration, and has major implications for the social environment. However young people who are willing and have the competences to take over a viable and competitive family farm should be stimulated to continue as farmer. This research holds important lessons for farmers, policy makers and other involved stakeholders.

At farm level, it is important to regard the farm business as a long-term process and to assess the succession possibilities in a relative early stage of the farm life cycle. A higher openness towards alternative legal farm structures is a necessity, as farming becomes more capital intensive, the globalisation of the agricultural production entails higher price variation and the family farm bears more risk as natural person. The intergenerational transfer of the family farm has to be considered as business transaction, with clear arrangements for all involved parties, in order to reduce family conflicts, especially in case of a gradual farm transfer.

At policy level, policy regulations should be further adapted to the increasing capital needs of young family farms, as family farms have to grow further in order to stay

competitive and viable. Related to farm transfer, the current governmental measures and policy regulations focus mainly on the moment of farm transfer, and measures such as the VLIF support want to enhance the farm transfer and stimulate a viable and competitive farm business. However the following measures or specific focuses could increase the transfer of family farms:

- Government should reconsider the alternative legal farm structures in agriculture. More specific the Flemish 'landbouwvennootschap' does not meet the needs of the current agriculture. Legal farm structures have to help farmers to overcome the high financial burden, to improve the personal liability and to facilitate the transfer of capital-intensive family farms.
- The transparency of policy regulations related to farm transfer and legal farm structures should be increased, in combination with a decrease of the administrational burden. The main objective of young farmers is to be involved in farming, but the complex regulations forces them to dedicate an increasing amount of time on administration. This administrative burden is an obstruction in the intention to farm succession.
- A competitive Flemish agricultural sector will only remain possible if land, as limited resource, can be optimal allocated to innovative farmers. Therefore retired farmers should be stimulated to transfer their land to young farmers, instead of continuing farming in a sub-optimal way.

A good and clear communication between government and farmers is essential for the survival of the Flemish agricultural sector. Education and extension services play a vital role in translating government regulations into a comprehensible message to (potential) young farmers. Education has to put more emphasise on the different aspects of farm transfer, beside the technical orientation of their students. Extension services have to stress the importance of a timely designation of the successor by the PDM.

The farm succession cycle is a complex process that involves a high number of stakeholders. Therefore future research can focus on the following aspects:

- Within the social aspects of farm transfer, we focused mainly on the potential successor, but further research can elaborate the succession intention model by including the other involved stakeholders such as parents, brothers and sisters, and partners. In particular the influence of the partner in the process of farm transfer can give more insight in the sociological process of farm transfer.
- The model related to the TFA as indicator for farm transfer, can also be fine-tuned by adding farm type specific elements such as quota for dairy production. TFA can also be used to model the influence of policy changes on farm transfer.

- Within our research related to investments, we did not focus on uncertainty about future benefits. However a farmer will take uncertainty about future benefits into account when he decides on investments. Future research can work on this factor by using the real options theory.
- Within the legal farm context, further research has to focus on the characteristics of a legal farm structure that fits the needs of a competitive farm business, within the general legal context.

The future of Flemish agriculture will probably consist of a limited number of competitive farmers, but government should create a stimulating environment in order to use all available resources in an efficient way.

Samenvatting

Het familiale landbouwbedrijf[23] is één van de hoekstenen van de Vlaamse land- en tuinbouw. Statistieken geven aan dat 87 percent van de landbouwbedrijven in Vlaanderen familiale bedrijven zijn, maar ook dat het totale aantal landbouwbedrijven de laatste 20 jaar gehalveerd is. De overname van leefbare familiale landbouwbedrijven is niet vanzelfsprekend, maar wel cruciaal voor de verdere ontwikkeling van de land- en tuinbouwsector. Dit onderzoek bestudeert daarom welke factoren van belang zijn in het proces van familiale bedrijfsovername binnen de land- en tuinbouwsector en dit in een lange termijn perspectief. De sociale, economische en wettelijke aspecten van bedrijfsovername komen aanbod met nadruk op de waarde-evolutie en financiering van bedrijven en de gevolgen voor het bedrijfsmanagement.

In de literatuur wordt de overname van het familiale landbouwbedrijf meestal gezien als een proces dat een beperkt aantal jaren duurt. Dit standpunt houdt echter geen rekening met de volledige dynamiek van de bedrijfscyclus. Men kan eigenlijk stellen dat de voorbereiding van een bedrijfsovername start wanneer de voorafgaande bedrijfsovernamecyclus beëindigd is. Verschillende generaties zijn betrokken bij de landbouwbedrijfcyclus. Dit voortdurende proces wordt weergegeven in een opvolgingscyclus die centraal staat in dit onderzoek. Aangezien de bedrijfsovername van een familiaal landbouwbedrijf een proces is dat zowel sociale, economische als wettelijke gevolgen heeft, moet met al deze aspecten rekening worden gehouden. De opvolgingscyclus start met de motivatie en de intentie van kinderen om het ouderlijke landbouwbedrijf verder te zetten. Een meerderheid verlaat de opvolgingscyclus echter al in één van de eerste stadia, en dit omwille van redenen zoals gebrek aan interesse, een niet-geïnteresseerde partner, andere beroepsmogelijkheden, ...

Het onderzoek toont aan dat een vroege zekerheid over deze interesse een belangrijke invloed heeft op de uitbouw van het bedrijf. De landbouwkapitaalswaarde van bedrijven begint anders te evolueren in een vroeg stadium voor de pensioenleeftijd naargelang bedrijven al dan niet over een opvolger beschikken en de mate van zekerheid hiervan. Het tijdig aanduiden van een opvolger stimuleert de bedrijfsleider om het landbouwbedrijf verder uit te bouwen zodat een leefbaar bedrijf in stand wordt gehouden. De invloed van het aanduiden van een opvolger op de investeringsbeslissingen noemen we het 'opvolgingseffect voor

[23] In deze samenvatting verwijzen de termen 'landbouwbedrijf' en 'landbouwer', zowel naar agrarische bedrijven/personen in de land- als tuinbouwsector.

overname'. Het doctoraat toont echter ook aan dat dit verschil in waardeontwikkeling nog gevolgen heeft in de ontwikkeling na overname. Het empirisch onderzoek toont immers aan dat bedrijven die ondanks de onzekerheid over opvolging in de pre-ovenameperiode, toch worden opgevolgd, hun achterstand in ontwikkeling niet of zeer moeilijk kunnen goed maken en dus een permanente ontwikkelingsachterstand kennen, hetgeen eventueel de overnamekansen in een volgende generatie kan hypothekeren. We verwijzen naar dit concept als 'opvolgingseffect na overname'.

De overname van het bedrijf kan gebeuren door middel van een directe bedrijfsovername, maar in de meeste gevallen is er sprake van een graduele bedrijfsovername. Dit heeft gevolgen voor de financieringswijze en bepaalt mede de investeringsmogelijkheden na de bedrijfsovername. In het doctoraat wordt ook aandacht besteed aan eventuele alternatieve eigendomsstructuren zoals vennootschappen en of deze een oplossing kunnen bieden om het overnameproces te vergemakkelijken. Uit het onderzoek blijkt een groot kennisgebrek op dit vlak bij de ondervraagde land- en tuinbouwers, maar in het algemeen ook een grote scepsis over de voordelen van dergelijke alternatieve structuren.

De bijdrage van dit onderzoek aan de wetenschappelijke kennis rond bedrijfsovername situeert zich vooral in het feit dat bedrijfsoverdracht gezien wordt op lange termijn, en dat verschillende aspecten simultaan moeten in rekening gebracht worden. In de volgende delen worden deze verschillende aspecten van de opvolgingscyclus bij landbouwbedrijven geanalyseerd, worden de algemene conclusies weergegeven en volgen er aanbevelingen voor verder onderzoek.

De sociale aspecten bij overname van het landbouwbedrijf

Bij de overname van het familiale landbouwbedrijf spelen niet alleen de economische leefbaarheid van het bedrijf, maar ook persoonlijke mening, visie en doelstellingen een rol bij de beslissing om het familiale landbouwbedrijf verder te zetten. Het 'model voor de bepaling van de opvolgingsintentie' dat ontwikkeld werd in dit onderzoek toont dat een houding die familie georiënteerd is, problemen door partner in verband met bedrijfsovername en beperkingen vanuit het beleid de voornaamste bepalende factoren zijn in de vorming van een positieve intentie voor bedrijfsovername van het familiale landbouwbedrijf. In combinatie met de kenmerken van het landbouwbedrijf zoals beperkte mogelijkheden voor groei van het bedrijf, beperkte leefbaarheid van het bedrijf en een vooruitstrevende bedrijfsmanagementhouding, samen met het praktische inschatten van de bedrijfsovername binnen de familie, bevindt de mogelijke bedrijfsopvolger zich in de intentie fase, de overtuigingsfase of de opvolgingsfase.

Niet alle kinderen van landbouwers staan open voor de overname van het familiale landbouwbedrijf en elk van hen volgt zijn eigen pad binnen het model voor de

bepaling van de opvolgingsintentie. Dit houdt in dat de doelgroep voor het stimuleren van het aantal overnames van landbouwbedrijven bestaat uit een beperkte aantal groepen van potentiële opvolgers. Specifieke aanbevelingen voor beleidsmaatregelen kunnen deze verschillen groepen helpen om het familiale landbouwbedrijf over te nemen:

- Transparante beleidsmaatregelen die betrekking hebben op de overname van een landbouwbedrijf kunnen de perceptie van potentiële bedrijfsopvolgers verbeteren. Een vereenvoudiging van de bedrijfsadministratie en de (milieu-) maatregelen kan het aantal kinderen van landbouwers met een positieve intentie doen toenemen. Een toegankelijk bedrijfsovernamebeleid kan de gepercipieerde problemen rond bedrijfsovername doen dalen.
- Duidelijke informatie rond de verschillende wettelijke bedrijfsstructuren helpt jonge landbouwers om te overwegen welke wettelijke structuur het beste past bij hun eigen landbouwbedrijf. Hierbij kunnen ze rekening houden met de relatie familie – landbouwbedrijf zonder op de familie een last te leggen. Landbouweducatie en –voorlichting moeten voldoende aandacht geven aan de kenmerken en gevolgen van de wettelijke bedrijfsstructuren.
- Door het gebrek aan beschikbare landbouwgrond hebben toekomstige landbouwers problemen om het bedrijf verder uit te breiden in de toekomst. Het landbouwbeleid zou pensioengerechtigde landbouwers die geen opvolgers hebben moeten stimuleren om de grond beschikbaar te maken voor jonge landbouwers. Het areaal dat op deze manier vrijkomt is beschikbaar voor een marktgerichte, concurrerende landbouw waardoor de productie zal stijgen. Een goed functionerende landmarkt en specifieke steunmaatregelen voor jonge landbouwers die nood hebben aan land, zijn hierbij cruciaal. Als voorbeeld kunnen het stimuleren van stopzetting van grondgebruik via financiële stimulansen en het prioritair toewijzen van grond aan jonge landbouwers gegeven worden.

Rekening houdend met deze aanbevelingen kunnen potentiële opvolgers minder beperkingen ervaren om een leefbaar familiale landbouwbedrijf over te nemen. Maar het moet benadrukt worden dat slechts een deel van de kinderen van landbouwers gemotiveerd is om het familiale landbouwbedrijf verder te zetten. Deze geïnteresseerden kunnen gestimuleerd worden door bovenstaande maatregelen. Een belangrijke taak is ook weggelegd voor het landbouwonderwijs. Zij moeten meer aandacht geven aan bedrijfsovername en de gerelateerde wetgeving binnen de eindtermen.

De economische aspecten bij overname van het landbouwbedrijf

Aangezien de voornaamste doelstelling van het familiale landbouwbedrijf de uitvoering van een economische activiteit op het landbouwbedrijf is, is de economische context bepalend bij bedrijfsovername. Het bedrijfsmanagement, en meer specifiek de investeringsbeslissingen, zijn gekoppeld aan de verschillende fases van de landbouwbedrijfcyclus. In de fases van consolidatie en uittrede heeft het aanduiden van de bedrijfsopvolger een belangrijke invloed op de investeringsbeslissingen van het landbouwbedrijf. Dit geeft de relatie weer tussen het langtermijn denken en het huidige bedrijfsmanagement.

Het tijdig aanduiden van de bedrijfsopvolger stimuleert bedrijfsinvesteringen zodat een leefbaar bedrijf kan overgedragen worden naar de volgende generatie. Het afwezig zijn van een opvolger zorgt ervoor dat de bedrijfsleider zich zal richten naar bedrijfsbeëindiging en er wordt gestreefd om de waarde van het bedrijf op het ogenblik van bedrijfsbeëindiging te optimaliseren.

In de literatuur zijn de indicatoren om de economische context van de bedrijfsovername te bestuderen, vooral gericht op bedrijfsoppervlakte en bedrijfsinkomen, maar wij zijn van mening dat dit niet de beste indicatoren zijn op het ogenblik van bedrijfsovername. Dit onderzoek stelt de 'totale activa van het landbouwbedrijf' (TFA) voor als indicator voor investeringsbeslissingen op het einde van de landbouwbedrijfcyclus. We tonen aan dat in de Vlaamse situatie het aanduiden van een opvolger aanleiding geeft tot een stijging van de totale activa van het landbouwbedrijf. Deze stijging is niet terug te vinden als er geen opvolger is aangeduid. Dit noemen we het opvolgingseffect voor overname.

Ook na de bedrijfsovername heeft de tijdige aanduiding van een opvolger invloed op de investeringsbeslissingen. Zowel op landbouwbedrijven waar de opvolger tijdig is aangeduid, als op bedrijven waar de opvolging nog onzeker was, zullen de totale activa van het landbouwbedrijf sneller groeien dan indien de bedrijfsleider stelde dat er geen opvolger was, maar waar het bedrijf toch is overgenomen. Dit toont dat de tijdige voorbereiding van een opvolger ook bepalend is in een succesvolle toekomst van het bedrijf. Zelfs indien de opvolging nog niet vast staat, zal de potentiële opvolger zich toch – mentaal – voorbereiden op de voortzetting van het bedrijf. Dit noemen we het opvolgingseffect na overname.

De combinatie van het opvolgingseffect voor en na overname geeft aan dat opvolgers die slechts op het laatste ogenblik beslisten om het bedrijf verder te zetten, moeilijk hetzelfde vooruitgangsniveau als hun collega's zullen bereiken. Maar ook opvolgers die nog onzeker waren over opvolging kunnen de achterstand van het opvolgingseffect voor overname moeilijk inhalen. De toekomstvisie van de uittredende bedrijfsleider heeft gevolgen voor de huidige en de volgende landbouwbedrijfcycli. Volgende beleidsaanbevelingen kunnen hier dan ook gemaakt worden.

Op dit ogenblik focust het beleid op de start van de landbouwbedrijfcyclus en steunt jonge landbouwers op het ogenblik van overname, en er vlak na. Onze resultaten tonen echter aan dat het einde van de landbouwbedrijfcyclus ook van groot belang is voor de toekomstige leefbaarheid van het landbouwbedrijf. Op het einde van de landbouwbedrijfcyclus kunnen de overheid en voorlichtingsdiensten het belang van de tijdige aanduiding van een opvolger en de gevolgen voor de toekomstige bedrijfsvoering benadrukken. Zo verhogen ze het bewustzijn van het belang van een tijdige aanduiding van een opvolger en wordt het opvolgingseffect voor overname gestimuleerd.

Het VLIF hecht veel aandacht aan het moment van overname en de verdere ontwikkeling van het bedrijf door het toekennen van vestigingssteun en investeringssteun, maar deze maatregelen zijn meer dan een stimulus: ze bepalen de timing en overnameprijs bij bedrijfsovername, maar ook het aantal bedrijfsovernames (vooral bij verwachte wijzigingen in het beleid). We stellen echter vast dat het door het VLIF vastgelegde maximumbedrag voor vestigingssteun niet aansluit bij de waarde van de huidige land- en tuinbouwbedrijven, waardoor een graduele bedrijfsovername gestimuleerd wordt. Een aanzienlijk bedrag van eigen kapitaal is noodzakelijk om een lening bij de bank te kunnen aangaan, maar in het algemeen hebben jonge startende landbouwers hulp nodig van familie om de lening, en de bedrijfsovername mogelijk te maken. Aangezien deze (graduele) bedrijfsovername een aantal jaren duurt, is het noodzakelijk om duidelijke afspraken te maken met alle betrokken familieleden.

Het juridisch kader bij overname van het landbouwbedrijf

De meerderheid van de Vlaamse bedrijven zijn familiale bedrijven onder natuurlijke persoon. Een vergelijking van de verschillende wettelijke bedrijfsvormen in België, Nederland en Frankrijk toont echter dat de Vlaamse vennootschapsvormen in België minder voordelen geven aan de bedrijfsleiders dan in de naburige landen. Er is dus ruimte voor een verdere aanpassing en verbetering van de verschillende vennootschapsvormen binnen de land- en tuinbouw. Zij kunnen geoptimaliseerd worden, rekening houdend met de noden van de landbouwers, en zo het Vlaamse concurrentievermogen binnen de Europese markt verhogen.

In België heeft het familiale bedrijf als natuurlijke persoon een aantal nadelen ten opzicht van de verschillende vennootschapsvormen (vb. belastingen, persoonlijke aansprakelijkheid, bedrijfsovername, …). In de ideale situatie zou de bedrijfsleider die wettelijke bedrijfsstatus moeten kiezen die het beste aansluit bij de eigen bedrijfssitautie. In praktijk is de objectieve kennis echter onvoldoende om een weloverwogen keuze te maken en de subjectieve perceptie versterkt dit proces. Meer concreet ervaren bedrijfsleiders vennootschapsvormen als administratief belastend. De fiscale en andere voordelen zijn niet duidelijk. Het feit dat de

landbouwvennootschap, die speciaal ontworpen is voor land- en tuinbouwbedrijven, niet positief ervaren wordt, is hier een kenmerkend voorbeeld van. De overheid kan rekening houden met deze resultaten en deze specifieke vorm aanpassen of een nieuwe vennootschapsvorm creëren die beter aansluit bij de noden van de landbouwers.

In het algemeen kunnen we stellen dat bedrijfsleiders die actief zijn als natuurlijke persoon de fiscale voordelen en voordelen van aansprakelijkheid van vennootschapsvormen erkennen, maar de complexiteit van deze vormen, zowel op vlak van administratie als wetgeving, beperkt de overgang naar deze vennootschapsvormen. Bedrijfsleiders die reeds actief zijn binnen een vennootschapsvorm erkennen ook de voordelen, maar ze zitten niet vastgeroest binnen deze vorm. Indien er andere vennootschapsvormen beter aansluiten bij hun bedrijfssituatie zullen ze overschakelen naar die situatie die hen het meest optimaal lijkt.

Afhankelijk van de individuele bedrijfssituatie moeten landbouwers dus een weloverwogen keuze maken tussen de natuurlijke persoon of verschillende vormen van vennootschappen. Ondanks alles zullen vennootschapsvormen enkel aangenomen worden door bedrijfsleiders die alle voor- en nadelen tegen elkaar afwegen en van mening zijn dat de hogere administratieve last gecompenseerd wordt door een lager financieel risico en andere voordelen. Maar een goede voorlichting van bedrijfsleiders kan ervoor zorgen dat de drempel verlaagd wordt.

Algemeen besluit en aanbevelingen voor verder onderzoek

De overname van een leefbaar familiaal landbouwbedrijf is niet meer vanzelfsprekend in onze huidige maatschappij. Het is een complex proces dat kapitaalsintensief is, heel wat administratie met zich meebrengt, en een belangrijke invloed heeft op de sociale omgeving. Toch zijn er nog steeds jongeren die bereid zijn en de vaardigheden hebben om het familiaal landbouwbedrijf over te nemen. Er moet verder gewerkt worden aan een positief klimaat zodat zij verder gestimuleerd worden om het familiaal landbouwbedrijf verder te zetten. Uit dit onderzoek kunnen verschillende lessen getrokken worden voor zowel landbouwers, de overheid, als andere betrokken partijen.

Op bedrijfsniveau is het belangrijk om het familiaal landbouwbedrijf als een proces op lange termijn te bekijken. Er moet reeds in een relatief vroeg stadium van de landbouwbedrijfcyclus gekeken worden naar de mogelijkheden van bedrijfsopvolging. Een grotere openheid ten opzichte van vennootschapsvormen is nodig aangezien de familiale landbouwbedrijven steeds kapitaalsintensiever worden, de globalisatie van landbouwproductie een grotere prijsvariatie met zich meebrengt en het familiaal bedrijf een groot risico draagt als natuurlijke persoon. De overdracht van het familiale bedrijf tussen twee generaties moet gezien worden als een zakelijke

transactie, met duidelijke afspraken tussen alle betrokken partijen, zodat familiale problemen vermeden worden, zeker bij een graduele overname.

Op beleidsniveau moet de regelgeving verder aangepast worden zodat rekening gehouden wordt met de stijgende kapitaalsbehoefte van jonge familiale landbouwbedrijven. Deze bedrijven moeten immers groeien om te kunnen blijven concurreren en leefbaar te blijven. De huidige beleidsmaatregelen rond bedrijfsovername op landbouwbedrijven focussen voornamelijk op het ogenblik van bedrijfsovername en de daaropvolgende investeringsperiode. Maatregelen zoals de VLIF-steun stimuleren bedrijfsovername en de leefbaarheid van het individuele bedrijf. Volgende specifieke maatregelen kunnen de bedrijfsovername stimuleren:

- De overheid zou zich opnieuw moeten buigen over de vennootschapsvormen binnen de land- en tuinbouw. De landbouwvennootschap voldoet niet aan de noden van de huidige land- en tuinbouw. Wettelijke bedrijfsvormen moeten bedrijfsleiders helpen om de financiële last te dragen, de persoonlijke aansprakelijkheid te verbeteren en de overname van kapitaalsintensieve bedrijven mogelijk te maken.
- De duidelijkheid van de wettelijke regelgeving rond bedrijfsovername en de vennootschapsvormen moet verhoogd worden, en dit samen met een daling van de administratieve belasting. De belangrijkste doelstelling van jonge landbouwers is om actief te werken op het bedrijf, maar de complexe regelgeving dwingt hen om steeds meer tijd te besteden aan administratie. Deze administratieve belasting is dan ook een hinderpaal voor vele potentiële bedrijfsopvolgers.
- Een concurrerende Vlaamse land- en tuinbouwsector is enkel mogelijk als land op een optimale manier kan toegewezen worden aan innovatieve landbouwers. De overheid kan gepensioneerde landbouwers stimuleren om hun land beschikbaar te stellen voor jonge landbouwers, in plaats van te blijven boeren op een niet-optimale manier.

Een goede en duidelijke communicatie tussen overheid en landbouwers is noodzakelijk voor het overleven van de Vlaamse land- en tuinbouwsector. Onderwijs en voorlichting spelen een essentiële rol bij het vertalen van het beleid in een verstaanbare boodschap voor (potentiële) jonge landbouwers. Het landbouwonderwijs moet meer nadruk leggen op de verschillende aspecten van bedrijfsovername, naast de technische opleiding van hun studenten. Voorlichting moet het belang van een tijdige aanduiding van de opvolger binnen het bedrijf benadrukken.

De landbouwbedrijfcyclus is een complex proces dat vele verschillende betrokken partijen omvat. Verder onderzoek kan daarom op de volgende aspecten toegespitst worden:

- Binnen de sociale omgeving hebben we vooral de aandacht gevestigd op de potentiële opvolger, maar verder onderzoek kan het model voor opvolgingsintentie verder uitwerken door andere betrokken partijen zoals ouders, broers en zussen, partners, … ook te betrekken. In het bijzonder kan sociologische onderzoek de invloed van de partner in het opvolgingsproces beter in kaart brengen.
- Binnen de economische omgeving geven de huidige modellen voor de opvolgingseffecten een heel algemeen beeld. Door het opsplitsen in verschillende subgroepen kunnen bedrijfsspecifieke effecten die in de huidige modellen vervat zitten in de niet-geobserveerde heterogeniteit, naar de voorgrond gebracht worden, en kunnen de modellen verfijnd worden. Op deze manier kunnen bijvoorbeeld binnen de melkveesector melkquota toegevoegd worden. De totale activa van het bedrijf kunnen ook gebruikt worden om de invloed van beleidsveranderingen op bedrijfsovername te modelleren.
- De waardering van landbouwbedrijven in een dynamische omgeving is niet vanzelfsprekend. De investeringen op landbouwbedrijven worden genomen met bepaalde toekomstverwachtingen en rekening houdend met een bepaald risico. Verder onderzoek kan ook dit risico in beeld brengen door middel van de reële optietheorie waarbij de onomkeerbaarheid van een investering in combinatie met de kans dat zich op termijn betere gelegenheden zullen voordoen beschouwd wordt. Het risico wordt gezien als een bijzonder soort investeringskosten voor de landbouwer. Dit onderzoek kan zich richten op sectorniveau.
- Binnen het juridisch kader kan verder onderzoek zich toespitsen op de kenmerken van vennootschapsvormen die het best aansluiten bij een concurrerende land- en tuinbouwsector, en dit binnen de algemene wettelijke mogelijkheden.

De toekomst van de Vlaamse land- en tuinbouw zal waarschijnlijk bestaan uit een beperkt aantal moderne landbouwers, maar de overheid moet hiervoor een stimulerende omgeving creëren zodat alle beschikbare hulpbronnen op een efficiënte manier kunnen gebruikt worden.

Bovenstaande geeft duidelijk aan dat bedrijfsopvolging gezien moet worden vanuit een lange-termijn perspectief waarbij alle beïnvloedende factoren in rekening moeten gebracht worden. Belangrijkste beleidsconclusie is dan ook dat bedrijven nog beter moeten omringd worden om tijdig de bedrijfsovername voor te bereiden en te begeleiden. Het systematisch bepalen in een bedrijfsadviessysteem van de in het doctoraat ontwikkelde 'farm asset' indicator kan hierbij een instrument zijn nuttig voor zowel het interne management als voor de bedrijfsadvisering.

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Appendix 1 – Questionnaire related to the succession intention model

Below, the printed version of the Internet questionnaire related to the intention-decision model is given. The use of the Internet makes it possible to forward the respondent to specific questions depending on the answers given.

Module 1 – General information on the respondent

1. Woonplaats (postcode) …….

2. Geslacht man vrouw

3. Hoogste opleiding (beëindigd of aan het volgen)

lager onderwijs	
middelbaar onderwijs	
graduaat (hoger onderwijs korte type)	
hoger onderwijs lange type- buiten universiteit	
universiteit	

4. Volg je een landbouwopleiding? ja neen

5. Geboortejaar 19.....

   < 1966 Deze enquête is gericht aan jongeren (< 40 jaar) die wonen op een land- of tuinbouwbedrijf. Toch bedankt voor de deelname aan deze enquête!

   = >1966 ga naar vraag 6

6. Woon je op een land- of tuinbouwbedrijf? (omcirkel)

   ja ga naar vraag 7

   neen Deze enquête is gericht aan jongeren die wonen op een land- of tuinbouwbedrijf. Toch bedankt voor de deelname aan deze enquête!

7. Aantal broers: ……

1	geboortejaar:	……..
2	geboortejaar:	……..
3	geboortejaar:	……..
4	geboortejaar:	……..
5	geboortejaar:	……..
6	geboortejaar:	……..

8. Aantal zussen …….

1	geboortejaar:	……..
2	geboortejaar:	……..
3	geboortejaar:	……..
4	geboortejaar:	……..
5	geboortejaar:	……..
6	geboortejaar:	……..

9. Is er een vader aanwezig binnen het gezin? (1 antw)
   ja — ga naar vraag 10.
   neen — ga naar vraag 15

10. Geboortejaar vader: 19…... geen idee

11. Hoogste opleiding vader (1 antw)

lager onderwijs	
middelbaar onderwijs	
graduaat (hoger onderwijs korte type)	
hoger onderwijs lange type- buiten universiteit	
universiteit	
geen idee	

12. Volgde je vader een landbouwopleiding? (1 antw) ja neen geen idee

13. Beroepsactiviteit vader (1 antwoord)

voltijds werkzaam op het land- of tuinbouwbedrijf	
deeltijds werkzaam op land- of tuinbouwbedrijf	
voltijds werkzaam buiten het land- of tuinbouwbedrijf	

14. Wat is de functie van de man binnen het huidige ouderlijke bedrijf? (1 antwoord)

man is bedrijfsleider	
man leidt samen met partner het bedrijf	
man werkt mee op het bedrijf als helper	
man regelt de administratie en financiën maar werkt niet fysisch mee op het bedrijf	
man doet het huishouden, maar is niet betrokken binnen het landbouwbedrijf (geen andere beroepsactiviteit)	
man werkzaam buiten het bedrijf	

15. Is er een moeder aanwezig binnen het gezin? (1 antw)

ja — ga naar vraag 16

neen — ga naar vraag 21

16. Geboortejaar moeder: (1 antw) 19….. geen idee

17. Hoogste opleiding moeder (1 antw)

lager onderwijs	
middelbaar onderwijs	
graduaat (hoger onderwijs korte type)	
hoger onderwijs lange type - buiten universiteit	
universiteit	
geen idee	

18. Volgde je moeder een landbouwopleiding? (1 antw) ja neen geen idee

19. Beroepsactiviteit moeder (1 antw)

voltijds werkzaam op het land- of tuinbouwbedrijf	
deeltijds werkzaam op land- of tuinbouwbedrijf	
voltijds werkzaam buiten het land- of tuinbouwbedrijf	

20. Wat is de functie van de vrouw binnen het huidige ouderlijke bedrijf? (1 antwoord mogelijk)

vrouw is bedrijfsleider	
vrouw leidt samen met partner het bedrijf	
vrouw werkt mee op het bedrijf als helper	
vrouw regelt de administratie en financiën maar werkt niet fysisch mee op het bedrijf	
vrouw doet het huishouden, maar is niet betrokken binnen het landbouwbedrijf (geen andere beroepsactiviteit)	
vrouw werkzaam buiten het bedrijf	

Module 2 – Farm characteristics

21. a. Totale bedrijfsgrootte (ha) …. ha…. a

b. Aantal ha in eigendom … ha … a

c. Aantal ha in pacht: … ha … a

22. Bedrijfstype (combinatie)

a. groenten - vollegrondsteelt	
b. groenten - serreteelt	
c. sierteelt	
d. akkerbouw	
e. rundveehouderij	
f. melkveehouderij	
g. varkenshouderij	
h. pluimveehouderij	

i. andere (specificeer):	

23. Aantal (moeder)dieren op bedrijf (combinatie)

a. runderen	
b. melkvee	
c. varkens	
d. pluimvee	
e. andere (specificeer):	

24. Gemiddeld aantal arbeidsuren per week op bedrijf (combinatie)

a. vader	
b. moeder	
c. kinderen	
d. andere	

25. Hebben uw ouders het huidige bedrijf zelf overgenomen van hun ouders? (1 antw)

ja, langs vaders kant	
ja, langs moeders kant	
ja, zowel langs vaders als moeders kant	
neen, ze zijn zelf gestart met een bedrijf	

26. Hoeveel jaar geleden zijn ze gestart / hebben ze het bedrijf overgenomen? ± ……jaar geen idee

Module 3 – Intention to farm succession

27. Zou je zelf het land- of tuinbouwbedrijf willen overnemen? (1 antw)
ja — ga naar vraag 28
neen — ga naar vraag 30

28. Waarom zou je het bedrijf willen overnemen? (meerdere mogelijkheden)

a. omdat de ouders dit willen	
b. bedrijf biedt mogelijkheden om concurrentieel te blijven	
c. het sluit aan bij mijn studies	
d. bedrijf biedt mogelijkheden om koploper te zijn binnen sector	

e. dit lijkt me de ideale job	
f. het is een kinderdroom	
g. bedrijf voldoet aan de milieureglementeringen	
h. verbrede activiteiten zijn mogelijk binnen het bedrijf	
i. andere (specificeer):	
j. geen idee	

.

29. Welke problemen zouden er volgens jou zijn bij de overname van het bedrijf? (meerdere mogelijkheden)

a. problemen om in orde te zijn met (milieu)reglementeringen	
b. door de ligging heeft het bedrijf weinig of geen groeimogelijkheden	
c. het zal moeilijk zijn om de administratie rond te krijgen	
d. voldoende geld bijeenkrijgen om ouders te vergoeden	
e. de verdeling van het bedrijf onder de kinderen zal niet eenvoudig zijn	
f. het zal moeilijk zijn om een lening te verkrijgen voor de nodige aanpassingen / investeringen	
g. de machines zijn verouderd	
h. het zal moeilijk zijn om broers en zussen te vergoeden	
i. de ouders zullen zich nog steeds inmengen in de bedrijfsvoering	
j. de gebouwen zijn verouderd	
k. de wetgeving rond bedrijfsovername is te complex	
l. de ouders gaan niet akkoord met de overname	
m. de partner gaat niet akkoord met de overname	
n. het zal moeilijk zijn om voldoende arbeidskrachten te vinden	
o. andere (specificeer):	
p. geen problemen	

Ga naar vraag 31

30. Waarom zie je het niet zitten om het bedrijf over te nemen? (meerdere antwoorden mogelijk)

a. de (milieu)reglementeringen zijn te streng	
b. door de ligging heeft het bedrijf weinig of geen groeimogelijkheden	
c. de administratie van een land- of tuinbouwbedrijf is te zwaar	
d. de verdeling van het bedrijf onder de kinderen geeft problemen	
e. het overnamebedrag dat ik zou verschuldigd zijn aan de ouders is te hoog	
f. een lening te verkrijgen voor de nodige aanpassingen / investeringen is moeilijk	
g. de machines zijn verouderd	
h. ik zie het niet zitten om broers en zussen uit te betalen	
i. de ouders zullen zich nog steeds inmengen in de bedrijfsvoering	
j. de gebouwen zijn verouderd	
k. de wetgeving rond bedrijfsovername is te complex	
l. de ouders gaan niet akkoord met de overname	
m. de partner gaat niet akkoord met de overname	
n. voldoende arbeidskrachten te vinden is moeilijk	
o. andere (specificeer):	

Module 4 – Designation of the successor

31. Is er al een bedrijfsopvolger aangeduid? (omcirkel)

ja — ga naar vraag 33

neen / geen idee — ga naar vraag 32

32. Waarom werd er (nog) geen bedrijfsopvolger aangeduid? (meerdere antwoorden mogelijk)

a. bedrijf wordt niet overgelaten: het is niet leefbaar voor een volgende generatie	
b. geen interesse van kinderen	
c. verschillende kinderen zijn geïnteresseerd	

d. ouders denken nog niet aan overname	
f. er is een conflict binnen het gezin over de overname	
g. geen idee	
h. andere (specificeer)	

Ga naar vraag 47

33. Wie is (zijn) de toekomstige bedrijfsopvolger(s)? (verschillende antwoorden mogelijk)

a. ikzelf	
b. oudere broer	
c. jongere broer	
d. oudere zus	
e. jongere zus	
f. andere (specificeer):	

34. Indien het bedrijf zal overgenomen worden door meerdere kinderen: hoe wordt dit praktisch geregeld?

35. Hoe is het aanduiden van de bedrijfsopvolger(s) geregeld binnen het gezin? (meerdere antwoorden mogelijk)

a. oudste kind	
b. oudste zoon	
c. oudste dochter	
d. jongste kind	
e. jongste zoon	
f. jongste dochter	
g. kind(eren) met landbouwopleiding	
h. kind(eren) met interesse	
i. door onderling gesprek	
j. dit is door de jaren heen gegroeid	
k. ouders hebben dit beslist, maar niet alle kinderen gaan hiermee akkoord	
l. geen idee	

m. andere (specificeer):	

36. Gaan de andere gezinsleden akkoord met deze opvolger? (omcirkel) ja neen geen idee

37. Binnen welke periode zal het bedrijf volledig overgedragen worden aan opvolger(s)? ±…… jaar geen idee

38. Wat gaan ouders beroepsmatig doen na overname? (kruis aan)

pensioen	
meehelpen op het bedrijf	
buiten het bedrijf gaan werken	
geen idee	

Module 5 – Farm transfer

39. Ga je zelf het bedrijf overnemen? (omcirkel)

ja Ga naar vraag 40

Neen Ga naar vraag 47

geen idee Ga naar vraag 47

40. Hoe zal je na de overname de arbeid invullen binnen het bedrijf? (1 antw)

bedrijf wordt afgestemd op 1 arbeidskracht	
arbeid zal geleverd worden door bedrijfsleider en partner	
naast bedrijfsleider zal er nog familiale arbeid zijn (ouders, broers, zussen e.d.)	
naast bedrijfsleider zal er nog gehuurde arbeid zijn	
geen idee	

41. Welke veranderingen zal je aanbrengen in de bedrijfsvoering na de overname? (meerdere antwoorden mogelijk)

a. geen	
b. investeringen gericht op milieu	
c. investeringen gericht op productie	
d. uitbreiding van oppervlakte	
e. inkrimpen van de oppervlakte	
f. invoeren / uitbouwen van verbrede landbouwactiviteiten (thuisverkoop, hoevetoerisme, …)	

g. verandering in soorten gewassen / dieren	
h. verandering in productiemethode	
i. verandering in management	
j. geen idee	
k. andere (specificeer):	

42. Hoe zie je de functie van de partner binnen het toekomstige bedrijf? (1 antw)

partner is bedrijfsleider	
partner leidt samen met jou het bedrijf: beiden werken actief op het bedrijf	
partner werkt mee op het bedrijf als helper	
partner regelt de administratie en financiën maar werkt niet fysisch mee op het bedrijf	
partner doet het huishouden, maar is niet betrokken binnen het landbouwbedrijf (geen andere beroepsactiviteit)	
er zal geen partner zijn op het toekomstige bedrijf	

43. Welke taken voer je nu al uit binnen het land- of tuinbouwbedrijf van je ouders? (kruis aan)

Betaling van rekeningen	
lange termijn planning	
technische beslissingen	
tewerkstelling en management van bedrijf	
financiële beslissingen	
organisatie van werk	
dagelijkse planning	
geen	

44. In welke volgorde worden onderstaande taken overgedragen van ouders op kind(eren) bij de overname van een land- of tuinbouwbedrijf volgens jou?

Nummer van 1 (eerst overgedragen) tot 7 (laatst overgedragen)

betaling van rekeningen	
lange termijn planning	

technische beslissingen	
tewerkstelling management van bedrijf	
financiële beslissingen	
organisatie van werk	
dagelijkse planning	

45. Duid aan welke doelstellingen belangrijk zullen zijn in je toekomstige bedrijfsvoering (omcirkel)

		helemaal niet belangrijk			neutraal			heel belang-rijk
a.	Imago van het bedrijf	-3	-2	-1	0	1	2	3
b.	Flexibiliteit	-3	-2	-1	0	1	2	3
c.	Uitbreiden van het bedrijf	-3	-2	-1	0	1	2	3
d.	Productiviteit	-3	-2	-1	0	1	2	3
e.	Milieuvriendelijke productie	-3	-2	-1	0	1	2	3
f.	Kwaliteit van de productie	-3	-2	-1	0	1	2	3
g.	Kostenvermindering	-3	-2	-1	0	1	2	3
h.	Beperken van risico's	-3	-2	-1	0	1	2	3
i.	Creativiteit en innovatie	-3	-2	-1	0	1	2	3
j.	Diversificatie van productie	-3	-2	-1	0	1	2	3
k.	Financiële onafhankelijkheid	-3	-2	-1	0	1	2	3
l.	Specialiseren van het bedrijf	-3	-2	-1	0	1	2	3
m.	Gezonde liquiditeitspositie	-3	-2	-1	0	1	2	3
n.	Invoeren of uitbreiden van verbrede landbouwactiviteiten	-3	-2	-1	0	1	2	3

46. Indien je buiten het bedrijf zou moeten gaan werken, hoe schat je het vinden van werk buiten het land- of tuinbouwbedrijf

heel gemakkelijk	
gemakkelijk	
gewoon	

	in? (1 antw)	moeilijk	
		heel moeilijk	

Ga naar vraag 48

47.	Als je het bedrijf niet overneemt of nog niet weet of je het bedrijf gaat overnemen, binnen welke sector zou je dan werk zoeken? (1 antw)	binnen landbouwsector (toelevering, verwerking, voorlichting, onderzoek, …)	
		buiten landbouwsector	

Module 6 – Personal objectives

48.	Duid aan hoe belangrijk je volgende persoonlijke doelstellingen vindt (omcirkel)							
		helemaal niet belangrijk			neutraal			heel belangrijk
a.	Persoonlijke onafhankelijkheid	-3	-2	-1	0	1	2	3
b.	Voldoening in het geleverde werk	-3	-2	-1	0	1	2	3
c.	Zaak opbouwen voor familie	-3	-2	-1	0	1	2	3
d.	Plezier in werk dat ook je hobby is	-3	-2	-1	0	1	2	3
e.	Het beter doen dan anderen	-3	-2	-1	0	1	2	3
f.	Interesses hebben buiten de landbouw	-3	-2	-1	0	1	2	3
g.	Samenwerken met andere gezinsleden	-3	-2	-1	0	1	2	3
h.	Vrije tijd doorbrengen met mijn familie en vrienden	-3	-2	-1	0	1	2	3
i.	Een hoog inkomen	-3	-2	-1	0	1	2	3
j.	Zelfontplooiing (volgen van cursussen, opleidingen,…)	-3	-2	-1	0	1	2	3

Appendix 2 – Questionnaire related to the business legal structure of the farm

Below, the printed version of the questionnaire related to the business legal structure of the farm is given. The questionnaire was hold during the Flanders' agricultural fair (7-8-9 January 2005, Flanders Expo Gent).

Module 1 – General farm characteristics

Postcode van uw gemeente …… (v2)

Bedrijfsgrootte … ha … a (v3)

Bedrijfstype (kruis aan, eventueel combinatie)

tuinbouw: vollegrondsteelt		(v4a)
tuinbouw: serreteelt		(v4b)
akkerbouw		(v4c)
rundveehouderij (vlees + melk)		(v4d)
varkenshouderij		(v4e)
pluimveehouderij		(v4f)
andere: ……		(v4g)

Aantal equivalenten van voltijdse arbeidskrachten op het bedrijf? …… (v5)

Waarvan aantal equivalenten voltijdse familiale arbeidskrachten …… (v6)

Waarvan aantal equivalenten voltijdse niet-familiale arbeidskrachten…… (v7)

Baat u het bedrijf uit op voltijdse basis? (omcirkel)

Ja Neen, deeltijds (……...%) (v8)

Leeftijd bedrijfsleider (geboortejaar) 19…… (v9)

Hoogst behaalde diploma bedrijfsleider (kruis aan) (v10)

Lager onderwijs	
Secundair onderwijs	
Hoger onderwijs buiten universiteit	
Universiteit	

Aantal kinderen …… (v11)

Is er een bedrijfsopvolger aanwezig? (omcirkel) (v12)

Neen Ja Geen idee

Fiscaal regime voor belastingen (kruis aan) (v13)

Forfaitair	
Volledige aangifte	

In welke mate zijn onderstaande bedrijfsdoelstellingen voor U van belang? (omcirkel)

		Helemaal niet belangrijk		Neutraal				Zeer belangrijk
(v14)	Zaak opbouwen voor familie	-3	-2	-1	0	1	2	3
(v15)	Beperken van risico's	-3	-2	-1	0	1	2	3
(v16)	Uitbreiden van het bedrijf	-3	-2	-1	0	1	2	3
(v17)	Beperken van bedrijfsadministratie	-3	-2	-1	0	1	2	3
(v18)	Financiële onafhankelijkheid van het bedrijf	-3	-2	-1	0	1	2	3
(v19)	Beperken van schulden	-3	-2	-1	0	1	2	3

Module 2 – Knowledge level of different Belgian legal structures

Komen volgens U volgende bedrijfsvormen voor binnen de Vlaamse land- en tuinbouw? (kruis aan)

		ja, op relatief kleine bedrijven	ja, op relatief grote bedrijven	ja, op zowel kleine als grote bedrijven	neen	geen idee / nooit van gehoord
(v20)	Natuurlijke persoon - éénmanszaak					
(v21)	Vennootschap onder firma (VOF)					
(v22)	Gewone commanditaire vennootschap (CommV)					
(v23)	Naamloze vennootschap (NV)					
(v24)	Landbouwvennootschap (LV)					
(v25)	Besloten vennootschap met beperkte aansprakelijkheid (BVBA)					
(v26)	Eenpersoons BVBA (EBVBA)					
(v27)	Commanditaire vennootschap op aandelen (CommVA)					
(v28)	Coöperatieve vennootschap met beperkte aansprakelijkheid (CVBA)					
(v29)	Coöperatieve vennootschap met onbeperkte aansprakelijkheid (CVOA)					

Module 3 – Perception of business legal structure of the farm

Geef uw mening over volgende stellingen (omcirkel)

Natuurlijke persoon				
(v30)	Bij natuurlijke personen in het niet-forfaitair belastingsstelsel is er sprake van hogere belastingsschijf als men meer verdient	Niet akkoord	Akkoord	Geen idee
(v31)	Bij natuurlijke personen kan het bedrijf volledig worden overgelaten aan de opvolger, onafhankelijk van de mede-erfgenamen	Niet akkoord	Akkoord	Geen idee
(v32)	Bij een natuurlijke persoon is er bescherming van het privé-vermogen	Niet akkoord	Akkoord	Geen idee

BVBA				
(v33)	De oprichtingsakte van een BVBA kan onderhands gebeuren	Niet akkoord	Akkoord	Geen idee
(v34)	De BVBA kan belast worden volgens het principe van de forfaitaire BTW - landbouwregeling	Niet akkoord	Akkoord	Geen idee
(v35)	De BVBA is aangepast aan een aantal bijzondere landbouwwetgevingen zoals de pachtwet en het VLIF	Niet akkoord	Akkoord	Geen idee
(v36)	In de BVBA is er een verplichte boekhouding	Niet akkoord	Akkoord	Geen idee
(v37)	Het oprichten van een BVBA kan kosteloos gebeuren	Niet akkoord	Akkoord	Geen idee

Landbouwvennootschap				
(v38)	Bij een landbouwvennootschap is er geen bescherming van het privé-vermogen	Niet akkoord	Akkoord	Geen idee
(v39)	De landbouwvennootschap komt in aanmerking voor VLIF-steun met betrekking tot investeringen op land- en tuinbouwbedrijven	Niet akkoord	Akkoord	Geen idee
(v40)	De landbouwvennootschap wordt altijd belast volgens het principe van de vennootschapsbelasting	Niet akkoord	Akkoord	Geen idee
(v41)	In de landbouwvennootschap is er een wettelijk verplichte boekhouding	Niet akkoord	Akkoord	Geen idee
(v42)	Het oprichten van een landbouwvennootschap kan kosteloos gebeuren	Niet akkoord	Akkoord	Geen idee

Geef aan hoe U volgende kenmerken waarneemt bij zowel de bedrijfsvorm 'natuurlijke persoon' als bij de vennootschapsvorm (landbouwvennootschap, BVBA, …). Omcirkel het getal dat volgens u best aansluit bij de betreffende bedrijfsvorm

Natuurlijke persoon

weinig administratief werk	-3	-2	-1	0	1	2	3	veel administratief werk	(v43)
management beperkt in belang	-3	-2	-1	0	1	2	3	management belangrijk	(v44)
niet- flexibele bedrijfsvorm	-3	-2	-1	0	1	2	3	flexibele bedrijfsvorm	(v45)
juridisch complexe vorm	-3	-2	-1	0	1	2	3	juridisch eenvoudige vorm	(v46)
fiscaal niet voordelig	-3	-2	-1	0	1	2	3	fiscaal voordelig	(v47)
kapitaalsintensief	-3	-2	-1	0	1	2	3	slechts beperkt kapitaal noodzakelijk	(v48)
hoog kapitaalsrisico	-3	-2	-1	0	1	2	3	laag kapitaalsrisico	(v49)

Vennootschapsvorm (landbouwvennootschap, BVBA, …)

weinig administratief werk	-3	-2	-1	0	1	2	3	veel administratief werk	(v50)
management beperkt in belang	-3	-2	-1	0	1	2	3	management belangrijk	(v51)
niet- flexibele bedrijfsvorm	-3	-2	-1	0	1	2	3	flexibele bedrijfsvorm	(v52)
juridisch complexe vorm	-3	-2	-1	0	1	2	3	juridisch eenvoudige vorm	(v53)
fiscaal niet voordelig	-3	-2	-1	0	1	2	3	fiscaal voordelig	(v54)
kapitaalsintensief	-3	-2	-1	0	1	2	3	slechts beperkt kapitaal noodzakelijk	(v55)
hoog kapitaalsrisico	-3	-2	-1	0	1	2	3	laag kapitaalsrisico	(v56)

Module 4 – Own business legal structure of the farm

Juridische vorm van uw bedrijf (kruis aan) (v57)

natuurlijke persoon	
landbouwvennootschap	
BVBA	
andere: ……	
weet niet	

Hoe lang werkt u binnen uw bedrijf al volgens deze juridische vorm? (omcirkel) (v58)

minder 5 jaar 5-10 jaar 11-20 jaar meer dan 20 jaar

Waarom hebt u voor deze juridische vorm gekozen? (omcirkel)

		Helemaal niet van toepassing			Neutraal			Helemaal van toepassing
(v59)	deze bedrijfsvorm was reeds aanwezig bij de overname van het bedrijf	-3	-2	-1	0	1	2	3
(v60)	in deze bedrijfsvorm kan ik gemakkelijk VLIF-steun ontvangen bij investeringen	-3	-2	-1	0	1	2	3
(v61)	deze bedrijfsvorm heeft een beperkte administratie (minder 4 uur / week)	-3	-2	-1	0	1	2	3
(v62)	deze bedrijfsvorm biedt mij fiscale voordelen	-3	-2	-1	0	1	2	3
(v63)	deze bedrijfsvorm laat een vlotte overname van het bedrijf toe	-3	-2	-1	0	1	2	3
(v64)	met deze bedrijfsvorm kan ik het risico beperken	-3	-2	-1	0	1	2	3
(v65)	andere:	-3	-2	-1	0	1	2	3

Bent u recent overgeschakeld van een andere naar deze bedrijfsvorm? (omcirkel) (v66)

Neen ja, in …… (jaartal)

Indien neen, hebt u al overwogen om een andere bedrijfsvorm aan te nemen? (kruis aan) (v67)

Neen	
Ja, in beperkte mate	
Ja, in sterke mate	

Module 5 – Information gathering

Omcirkel bij de volgende vragen het antwoord dat voor U van toepassing is

Leest u artikels over andere bedrijfsvormen?	Nooit	Soms	Vaak	(v68)
Volgt U studiedagen, cursussen over andere bedrijfsvormen?	Nooit	Soms	Vaak	(v69)
Sprak U reeds met collega landbouwers of medewerkers op het bedrijf over andere bedrijfsvormen?	Nooit	Soms	Vaak	(v70)
Sprak U reeds met voorlichters (banken, beroepsorganisaties, …) over andere bedrijfsvormen?	Nooit	Soms	Vaak	(v71)
Informeerde U zich reeds wat omschakeling naar een andere bedrijfsvorm voor uw bedrijf zal betekenen?	Neen	Ja		(v72)
Zou u bij de overname van uw bedrijf dezelfde juridische structuur aanbevelen of gaat u bij de overname van het bedrijf dezelfde juridische structuur behouden?	Neen	Ja	Geen idee	(v73)

Indien u nog belangrijke redenen hebt tot omschakeling naar een andere bedrijfsvorm of bijkomende opmerking hebt over bedrijfsvormen in land- en tuinbouw dan kan u deze hier neerschrijven (v74) :

Appendix 3 – Analysis of variance

Appendix 3.1. Analysis of variance of the difference in TFA between the different succession intentions (successor designated, successor not yet designated, no successor designated) within a given accounting year of the FADN dataset

Year	F-value	p-value	Number of observations
1989	15.719	0.000	402
1990	17.437	0.000	378
1991	20.052	0.000	370
1992	20.993	0.000	338
1993	22.337	0.000	317
1994	36.617	0.000	302
1995	29.731	0.000	294
1996	18.628	0.000	260
1997	19.611	0.000	255
1998	28.330	0.000	250
1999	23.588	0.000	239
2000	17.581	0.000	245
2001	17.041	0.000	243
2002	20.670	0.000	236
2003	17.173	0.000	235

Appendix 3.2. Analysis of variance of the difference in TFA development (ΔTFA_{t-2}) between farm types, related to age of PDM

Age	F-value	p-value	Number of observations
45	0.795	0.665	234
46	1.360	0.188	219
47	1.092	0.369	202
48	1.913	0.031	202
49	1.945	0.028	201
50	0.694	0.756	200
51	0.547	0.881	193
52	0.484	0.922	193
53	1.020	0.439	196
54	0.947	0.502	195
55	0.768	0.683	186
56	0.703	0.735	193
57	1.354	0.193	186
58	0.780	0.671	171
59	0.725	0.713	155
60	0.891	0.551	124
61	1.304	0.234	109
62	0.831	0.618	94
63	1.093	0.383	68
64	0.462	0.916	55
65	1.366	0.250	37

Appendix 4 – Descriptive statistics

Variable	Mean	SD
Perception related to farm transfer		
Problems to meet the environmental regulations	0,275	0,447
The farm has no possibilities to grow	0,174	0,380
The administration is too difficult to cope with	0.232	0.423
Not enough money to compensate the parents	0.241	0.428
The division of the farm between the children is not easy	0.234	0.424
Difficult to get a loan from the bank for investments	0.148	0.356
The buildings and machinery got dated	0.118	0.323
Difficult to compensate the brothers and sisters	0.181	0.385
The parents will still be involved in the management	0.073	0.261
The policy regarding farm transfer is too difficult	0.163	0.370
Difficult to find enough labour	0.082	0.274
Partner doesn't agree with the farm transfer	0.086	0.281
Parents don't agree with the farm transfer	0.049	0.217
Parents don't agree with the choice of partner	0.017	0.130
Personal objectives		
Personal independence	0.419	0.494
Satisfaction in the work that's done	0.740	0.439
Set up a firm for the family	0.178	0.383
Enjoy the work that is also a hobby	0.654	0.476
Perform better than other people	0.103	0.305
Having interests outside agriculture	0.144	0.352
Colaborate with other family members	0.142	0.349
Spend free time with family and friends	0.327	0.470
A high income	0.200	0.400
Self-development	0.275	0.447

Appendix 5 – Factor analysis

	Family minded attitude related to farming	Policy limitations	Partner related problems	Family related arrangements of farm transfer	Growth limitations	Progressive farm management	Lack of farm viability
Perceptions related to farm transfer							
The farm has problems to meet the environmental regulations	-0.165	0.649	-0.119	0.112	0.108	0.159	0.100
The farm has no possibilities to grow	0.224	-0.202	0.028	0.093	0.538	-0.006	0.163
The farm administration is too difficult to cope with	-0.131	0.682	-0.101	0.002	-0.058	0.160	-0.169
There will not be not enough money to compensate the parents	-0.011	-0.329	-0.014	-0.016	-0.451	0.229	-0.050
The division of the farm between the children is not easy	-0.180	-0.216	-0.011	0.319	-0.383	0.239	0.368
It will be difficult to get a loan from the bank for the necessary investments	-0.084	0.081	0.399	-0.027	-0.256	0.258	0.541
The buildings and machinery of the farm got dated	0.038	-0.064	0.125	-0.023	0.271	-0.115	0.443

	Family minded attitude related to farming	Policy limitations	Partner related problems	Family related arrangements of farm transfer	Growth limitations	Progressive farm management	Lack of farm viability
It will be difficult to compensate the brothers and sisters	-0.192	-0.392	-0.032	-0.163	-0.364	0.321	-0.050
The parents will still be involved in the management	0.086	-0.225	-0.290	-0.467	0.149	0.033	-0.121
The policy regarding farm transfer is too difficult	-0.083	0.471	-0.047	-0.041	-0.212	0.255	-0.130
It will be difficult to find enough labour after farm transfer	0.219	0.100	0.143	-0.188	0.207	0.491	0.069
The partner doesn't agree with the farm transfer	-0.120	-0.136	0.600	0.278	0.062	-0.005	-0.391
The parents don't agree with the farm transfer	-0.085	-0.111	-0.004	0.082	0.333	-0.035	0.282
The parents don't agree with the choice of partner	0.061	-0.121	0.349	-0.069	-0.028	0.102	-0.529

	Family minded attitude related to farming	Policy limitations	Partner related problems	Family related arrangements of farm transfer	Growth limitations	Progressive farm management	Lack of farm viability
Personal objectives							
Personal independence	0.078	-0.147	0.280	-0.140	0.254	0.211	-0.021
Satisfaction in the work that's done	-0.213	-0.109	-0.150	0.134	-0.105	-0.447	0.063
Set up a firm for the family	0.335	-0.043	-0.160	0.377	0.277	0.422	-0.083
Enjoy the work that is also a hobby	0.550	0.175	0.115	-0.225	-0.379	-0.192	0.190
Perform better than other people	0.060	-0.075	-0.078	0.376	-0.065	0.230	0.036
Having interests outside agriculture	0.053	0.216	0.200	-0.110	0.079	0.322	0.135
Collaborate with other family members	0.498	0.060	-0.254	0.320	-0.159	0.077	-0.160
Spend free time with family and friends	-0.042	0.413	0.240	-0.099	0.030	-0.248	0.004
A high income	-0.246	-0.143	-0.270	-0.286	0.151	0.443	-0.001
Self-development	-0.498	-0.007	-0.044	0.137	0.269	0.070	-0.092

Scientific Curriculum Vitae

Mieke Calus was born in Ghent (Belgium) on April 26, 1978 and has followed secondary education at the Heilige Familie Instituut in Tielt. She has received the degree of Master in Bioscience Engineering (agricultural sciences) at Ghent University in 2001 with distinction. In 2003, she has also received the qualified teacher's degree for secondary education in applied biological sciences at Ghent University. In 2007, she completed the doctoral training degree at the Faculty of Bioscience engineering.

In September 2001, she has started as scientific researcher at the department of Agricultural Economics (Ghent University), where she made studies on the economic feasibility of pesticide reduction in agriculture, and on conversion to organic farming. In February 2003, she has become assistant at the department of agricultural economics (Ghent University) and was involved in the courses of farm management, project management, agricultural sociology, and organic farming. She supervised 11 master theses and was involved in the organisation and coordination of 6 intensive programmes sponsored by the EU and related to multifunctional agriculture and rural development in the enlarged European Union.

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